

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE TENNESSEE WESTERN VALLEY (BEECH RIVER) WATERSHED

4.1 Background.

4.2. Characterization of HUC-10 Subwatersheds

4.2.A. 0604000101 (Tennessee River)

4.2.B. 0604000102 (Snake Creek)

4.2.C. 0604000103 (Horse Creek)

4.2.D. 0604000104 (White Oak Creek)

4.2.E. 0604000105 (Indian Creek)

4.2.F. 0604000106 (Hardin Creek)

4.2.G. 0604000107 (Tennessee River)

4.2.H. 0604000108 (Beech River)

4.2.I. 0604000109 (Tennessee River)

4.2.J. 0604000110 (Cub Creek)

4.1. BACKGROUND. This chapter is organized by HUC-10 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
- ii.a. Description of facilities discharging to water bodies listed on the 2002 303(d) list
- iii. Description of nonpoint source contributions

The Tennessee portion of the Tennessee Western Valley (Beech River) Watershed (HUC 06040001) has been delineated into ten HUC 10-digit subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.0 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView® v3.x and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

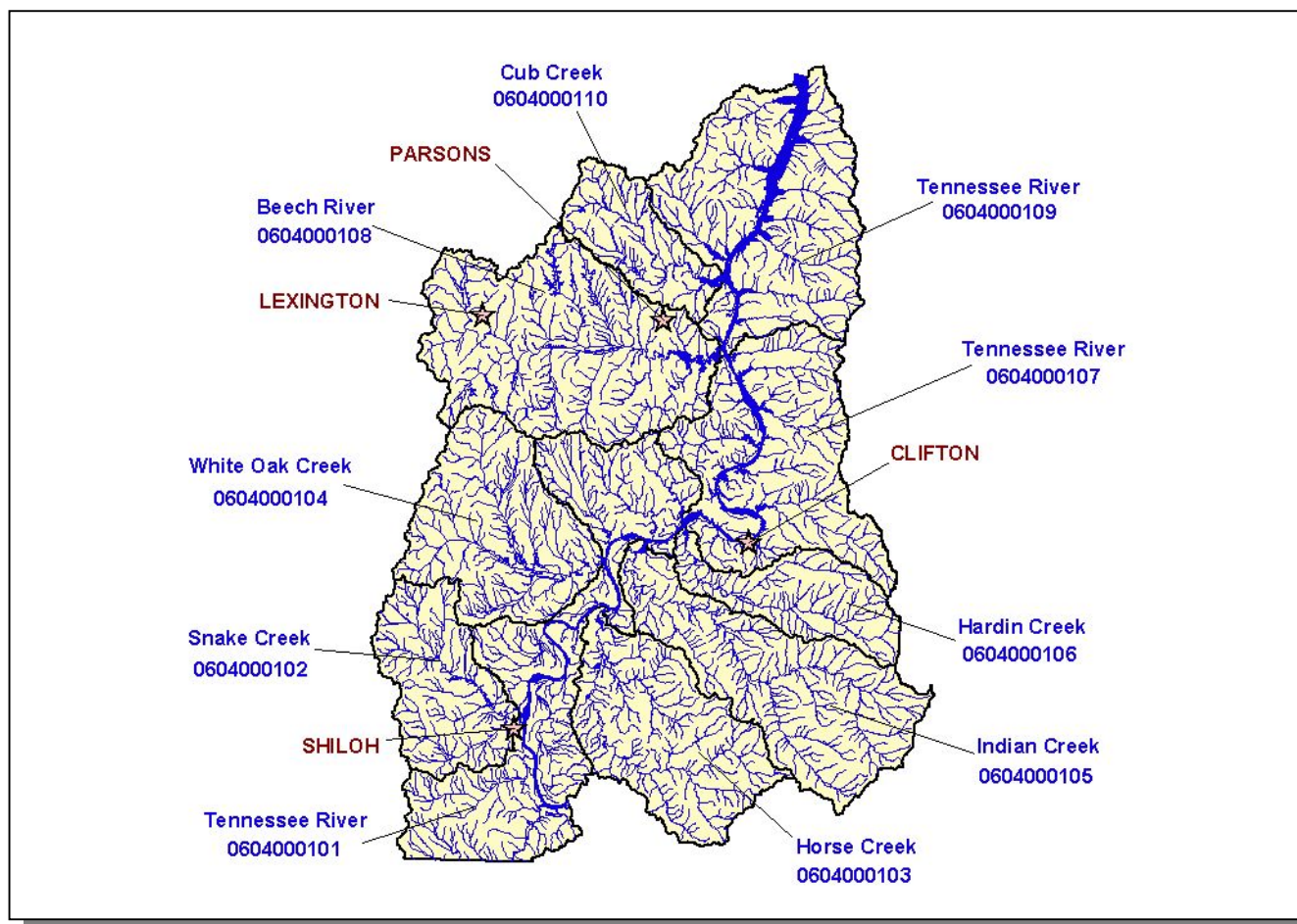


Figure 4-1. The Tennessee Portion of the Tennessee Western Valley (Beech River) Watershed is Composed of Ten USGS-Delineated Subwatersheds (10-Digit Subwatersheds). Locations of Clifton, Lexington, Parsons, and Shiloh are shown for reference.

4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Tennessee Western Valley (Beech River) Watershed.

HUC-10	HUC-12	
0604000101	060400010101 (Tennessee River)	060400010105 (Doe Creek)
	060400010102 (Chambers Creek)	060400010106 (Stewman Creek)
	060400010103 (Lick Creek)	060400010107 (Turnbo Creek)
	060400010104 (Tennessee River)	
		060400010203 (Owl Creek)
0604000102	060400010201 (Upper Snake Creek)	
	060400010202 (Lower Snake Creek)	
0604000103	060400010301 (Upper Horse Creek)	060400010303 (Lower Horse Creek)
	060400010302 (Holland Creek)	
0604000104	060400010401 (Little White Oak Creek)	060400010403 (White Oak Creek)
	060400010402 (Middleton Creek)	
0604000105	060400010501 (Indian Creek)	060400010504 (Indian Creek)
	060400010502 (Indian Creek)	060400010505 (Indian Creek)
	060400010503 (Weatherford Creek)	
0604000106	060400010601 (Upper Hardin Creek)	060400010603 (Lower Hardin Creek)
	060400010602 (Middle Hardin Creek)	
0604000107	060400010701 (Tennessee River)	060400010703 (Tennessee River)
	060400010702 (Beech Creek)	060400010704 (Tennessee River)
0604000108	060400010801 (Beech River)	060400010805 (Big Creek)
	060400010802 (Piney Creek)	060400010806 (Beech River)
	060400010803 (Beech River)	060400010807 Beech River)
	060400010804 (Beech River)	
0604000109	060400010901 (Tennessee River)	060400010904 (Tennessee River)
	060400010902 (Tennessee River)	060400010905 (Tennessee River)
	060400010903 (Lick Creek)	060400010906 (Blue Creek)
0604000110	060400011001 (Cub Creek)	060400011002 (Sulpher Fork Cub Creek)

Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages. NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

4.2.A. 0604000101 (Tennessee River).

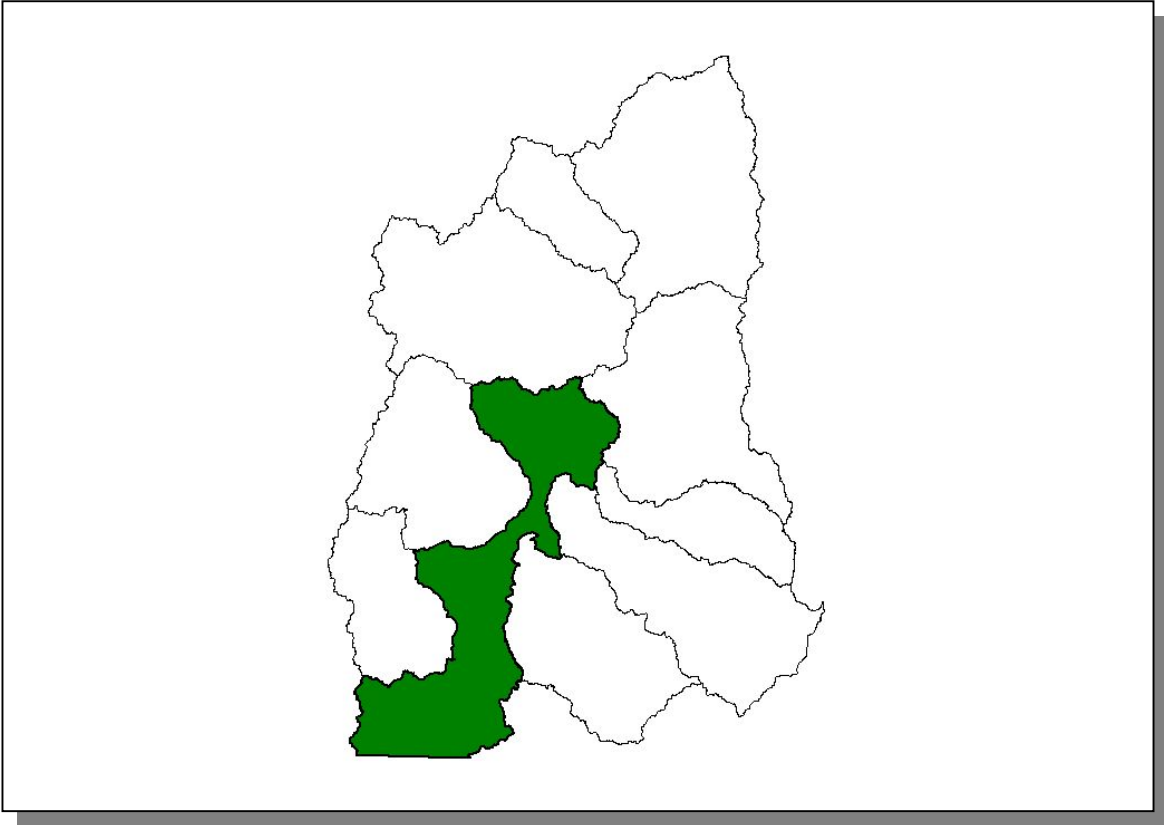


Figure 4-2. Location of Subwatershed 0604000101. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries are shown for reference.

4.2.A.i. General Description.

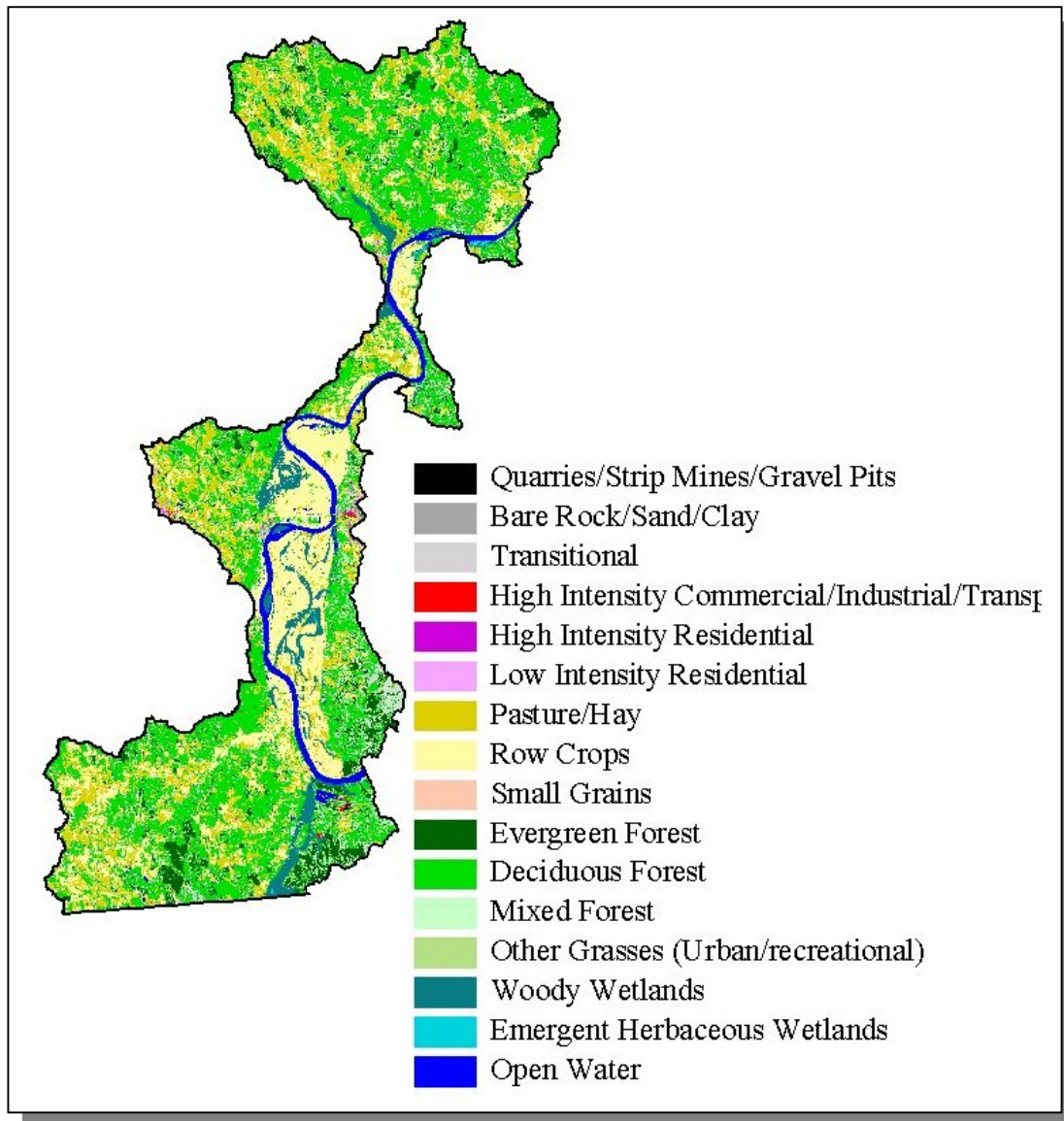


Figure 4-3. Illustration of Land Use Distribution in Subwatershed 0604000101.

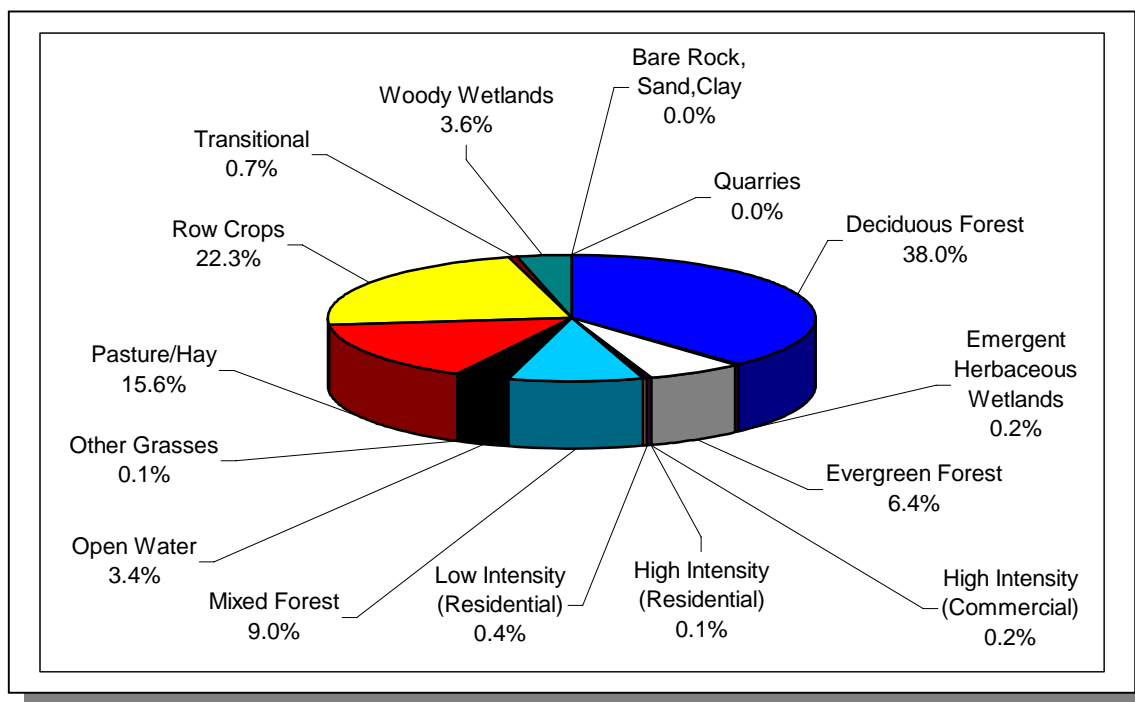


Figure 4-4. Land Use Distribution in Subwatershed 0604000101. More information is provided in Appendix IV.

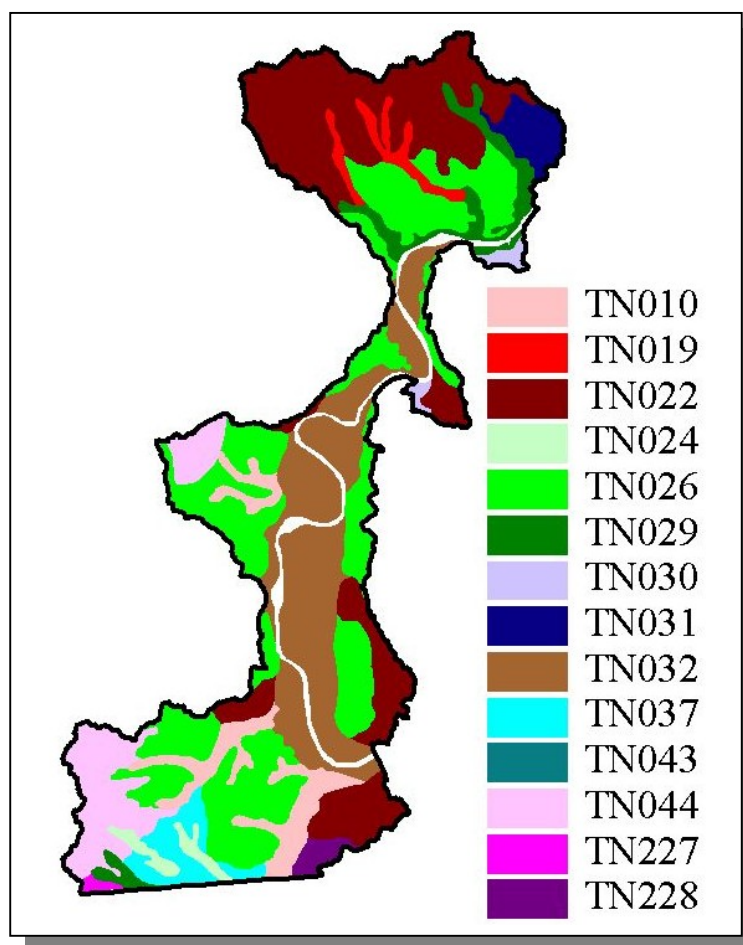


Figure 4-5. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000101.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN010	81.00	C	1.33	5.11	Silty Loam	0.44
TN019	62.00	C	1.54	4.76	Loam	0.26
TN022	5.00	C	1.98	5.07	Loam	0.37
TN024	61.00	D	2.18	5.35	Loam	0.29
TN026	0.00	B	1.52	5.13	Silty Loam	0.40
TN029	8.00	C	2.96	5.40	Loam	0.33
TN030	2.00	B	1.84	5.06	Loam	0.33
TN031	0.00	C	3.27	4.88	Loam	0.33
TN032	19.00	C	1.21	5.51	Silty Loam	0.37
TN037	0.00	C	3.51	4.86	Sandy Loam	0.27
TN043	0.00	C	2.70	5.02	Loam	0.30
TN044	0.00	C	1.48	5.32	Silty Loam	0.42
TN227	0.00	C	2.41	5.03	Silty Loam	0.38
TN228	1.00	B	3.32	5.09	Sandy Loam	0.28

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000101. More details are provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Henderson	21,844	24,000	25,522	3.72	812	892	949	16.9
McNairy	22,422	23,678	24,653	7.97	1,788	1,888	1,966	10.0
Totals	77,371	83,293	87,484		10,892	11,746	12,266	12.6

Table 4-3. Population Estimates in Subwatershed 0604000101.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Adamsville	McNairy	1,745	764	606	154	4
Crump	Hardin	2,006	951	67	873	11
Michie	McNairy	709	309	2	300	7
Sardis	Henderson	315	159	8	151	0
Scotts Hill	Henderson	611	297	12	278	7
Saltillo	Hardin	377	232	13	194	25
Savannah	Hardin	6,569	2,782	2,719	63	0
Totals		12,352	2,712	3,427	2,013	54

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000101.

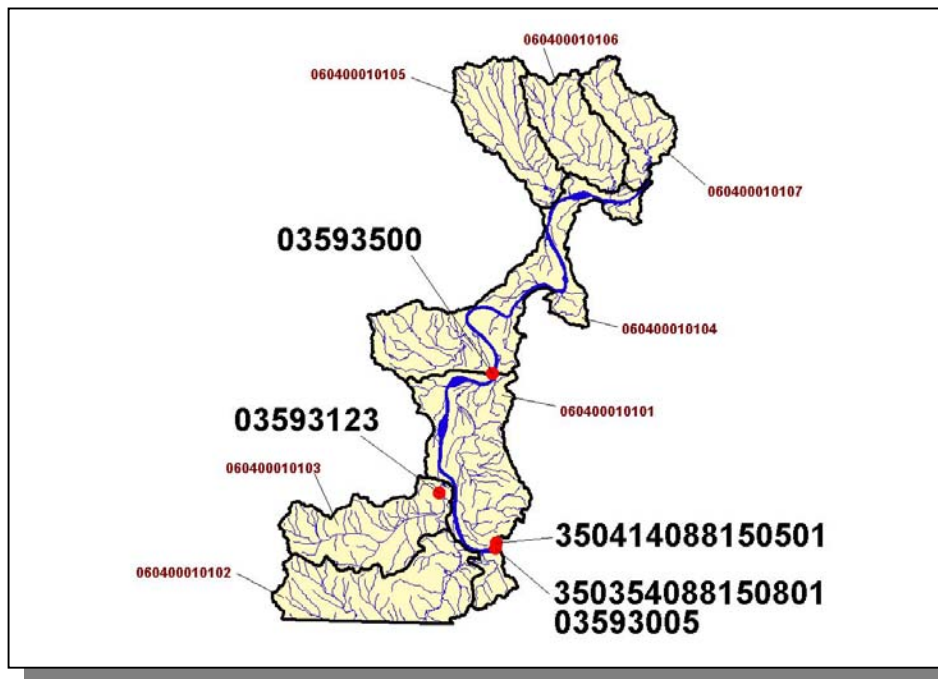


Figure 4-6. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010105, 060400010106 and 060400010107 boundaries are shown for reference. More information is provided in Appendix IV.

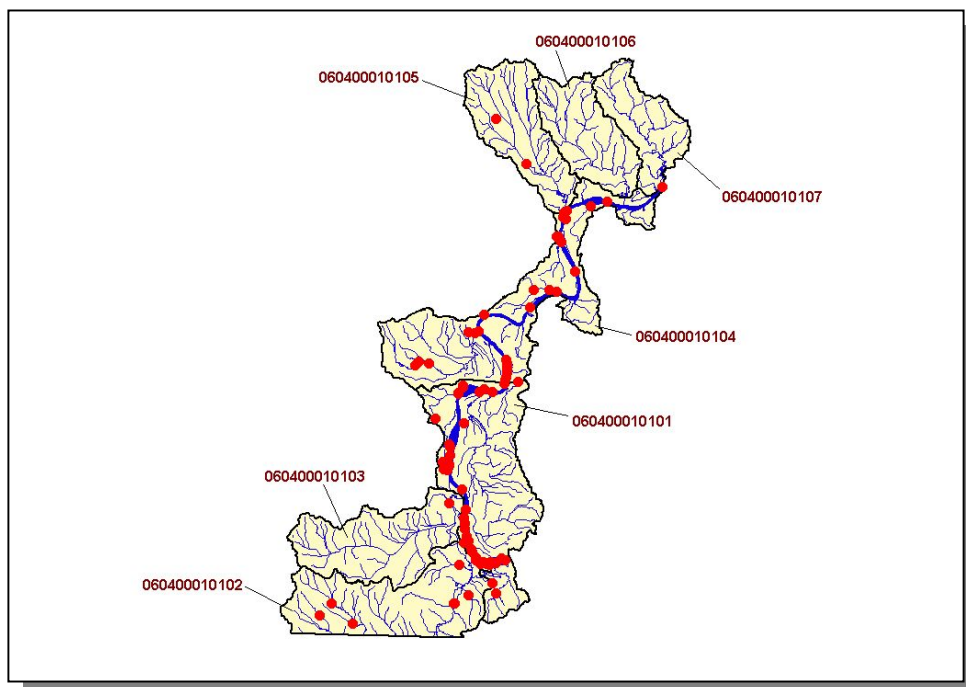


Figure 4-7. Location of STORET Monitoring Sites in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010105, 060400010106 and 060400010107 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.A.ii Point Source Contributions.

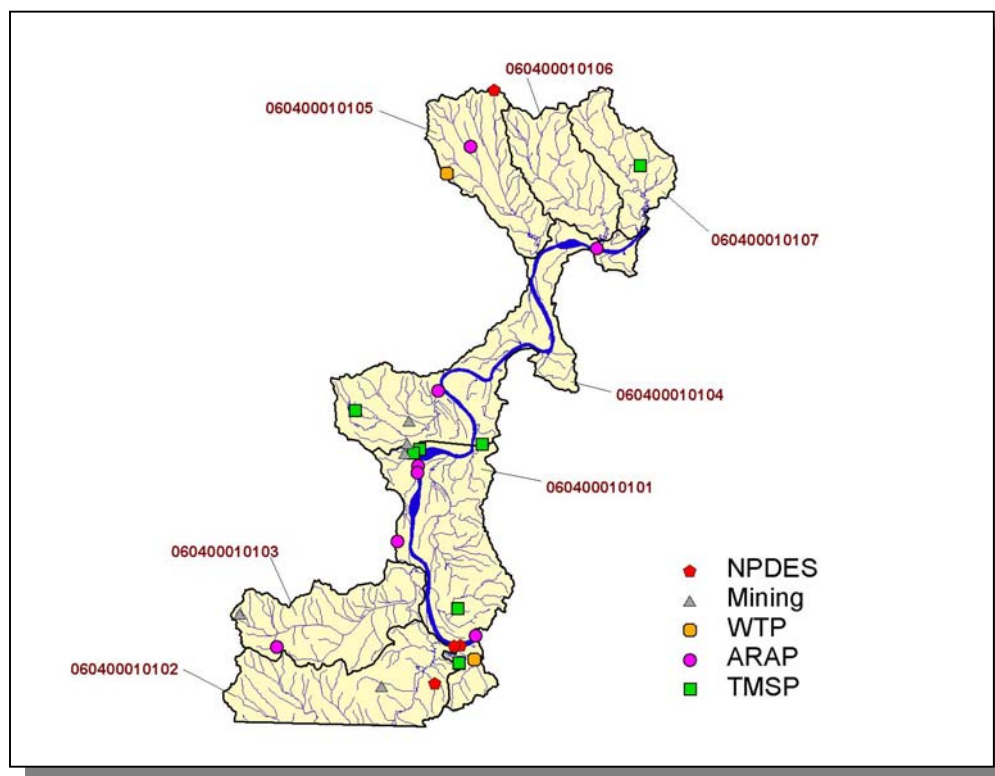


Figure 4-8. Location of Active Point Source Facilities in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010104, 060400010105, 060400010106, and 060400010107 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

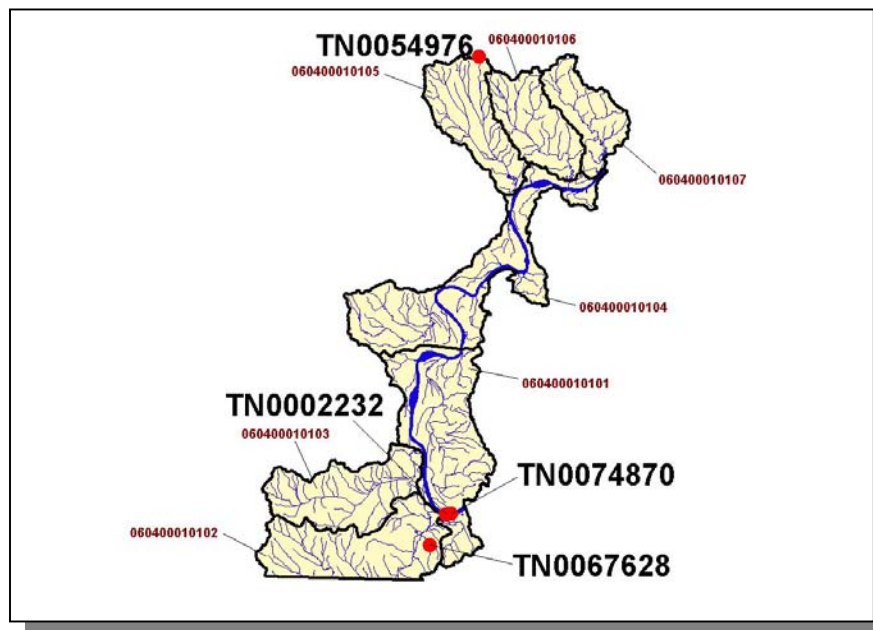


Figure 4-9. Location of NPDES Facilities in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010104, 060400010105, 060400010106, and 060400010107 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

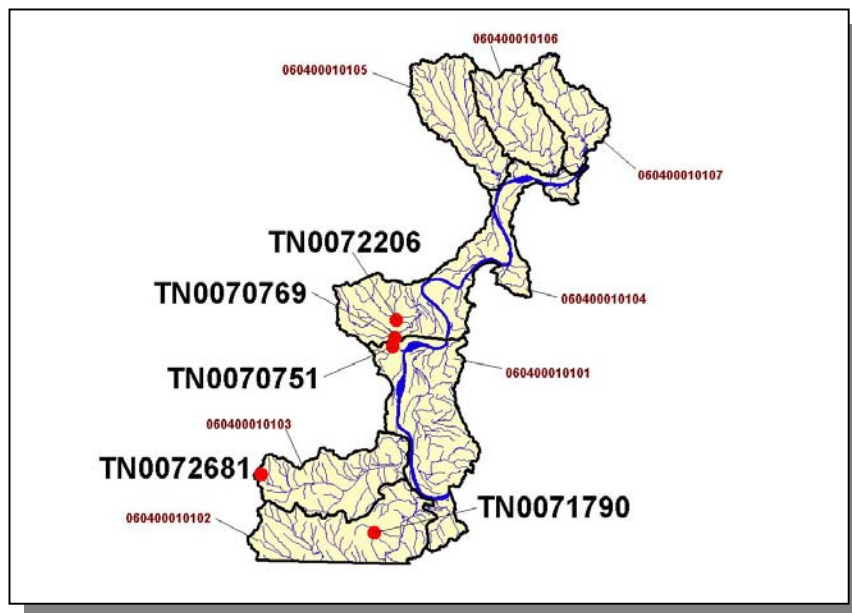


Figure 4-10. Location of Active Mining Facilities in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010104, 060400010105, 060400010106, and 060400010107 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

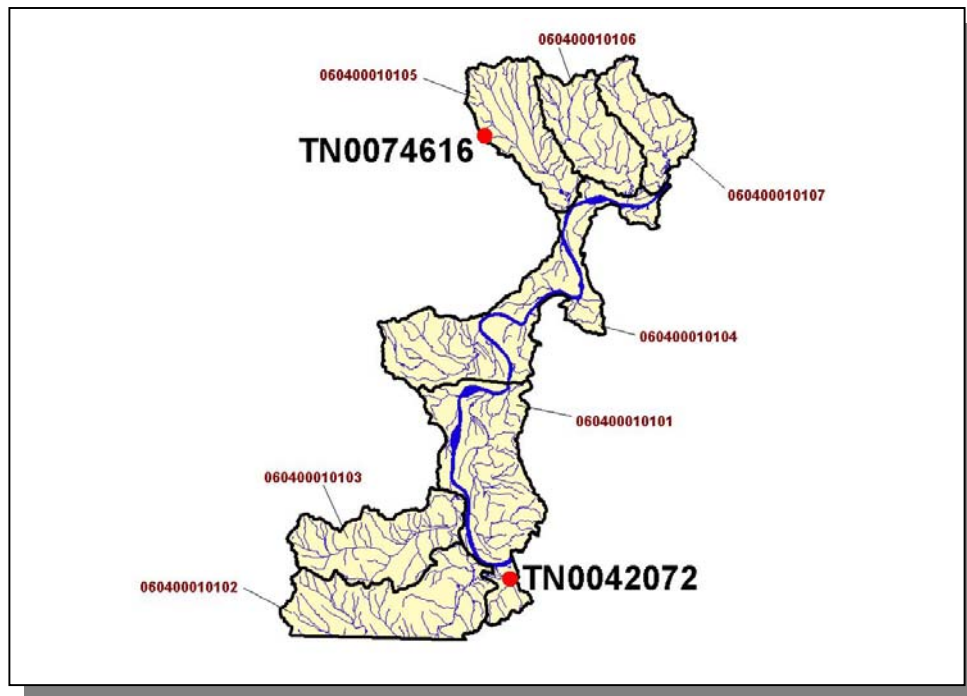


Figure 4-11. Location of Water Treatment Plants in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010104, 060400010105, 060400010106, and 060400010107 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

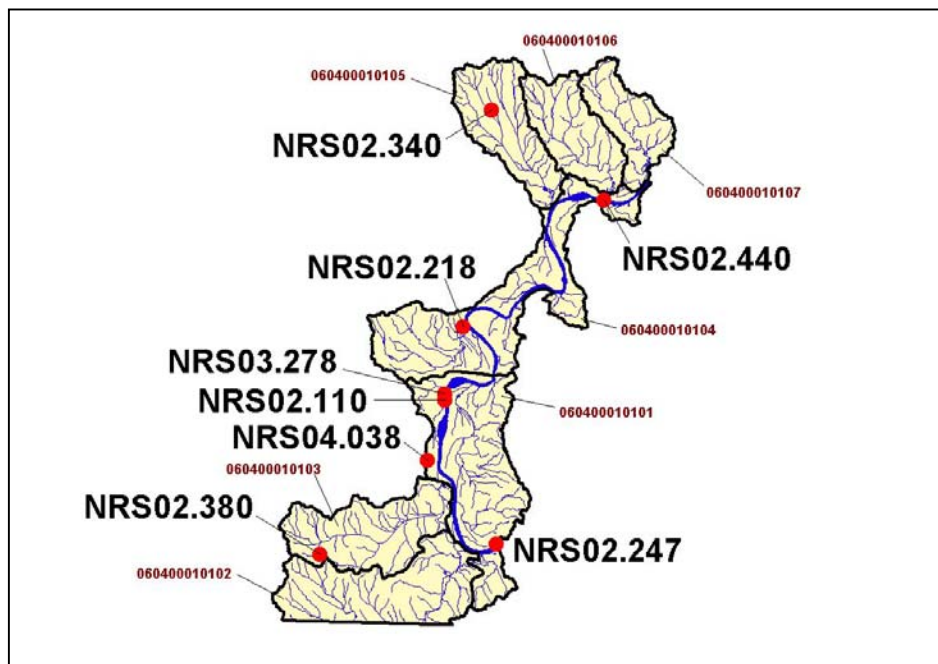


Figure 4-12. Location of ARAP Sites (Individual Permits) in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010104, 060400010105, 060400010106, and 060400010107 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

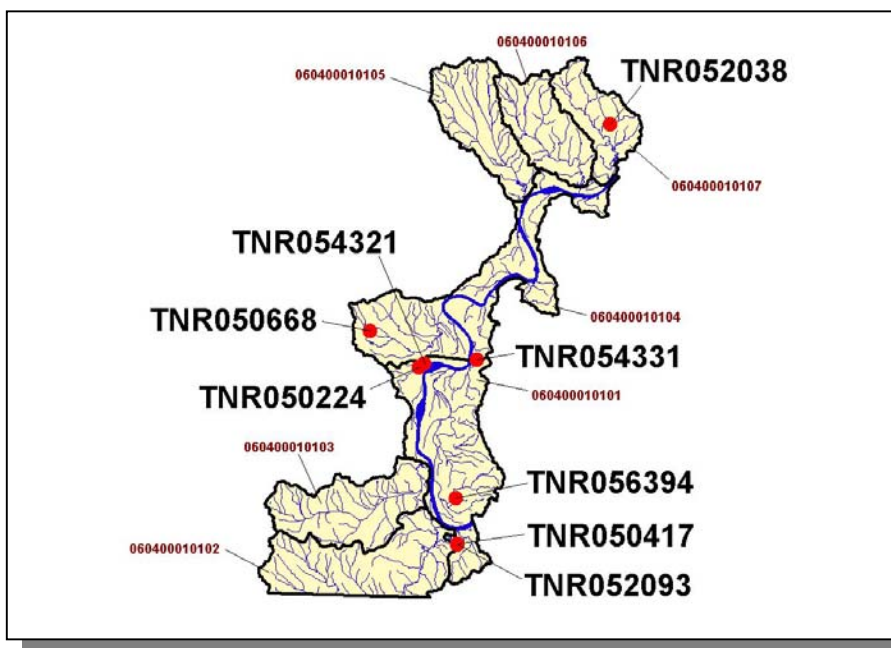


Figure 4-13. Location of TMSP Facilities in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010104, 060400010105, 060400010106, and 060400010107 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 2002 303(d) List

There are two NPDES facilities discharging to water bodies listed on the 2002 303(d) list in Subwatershed 0604000101:

- TN0054976 (Scotts Hill School STP) discharges to East Prong Doe Creek @ RM 7.7
- TN0067628 (Maverick Tube Corporation) discharges to Ditch to Battle Branch @ RM 2.2 to Chambers Creek @ RM 5.5

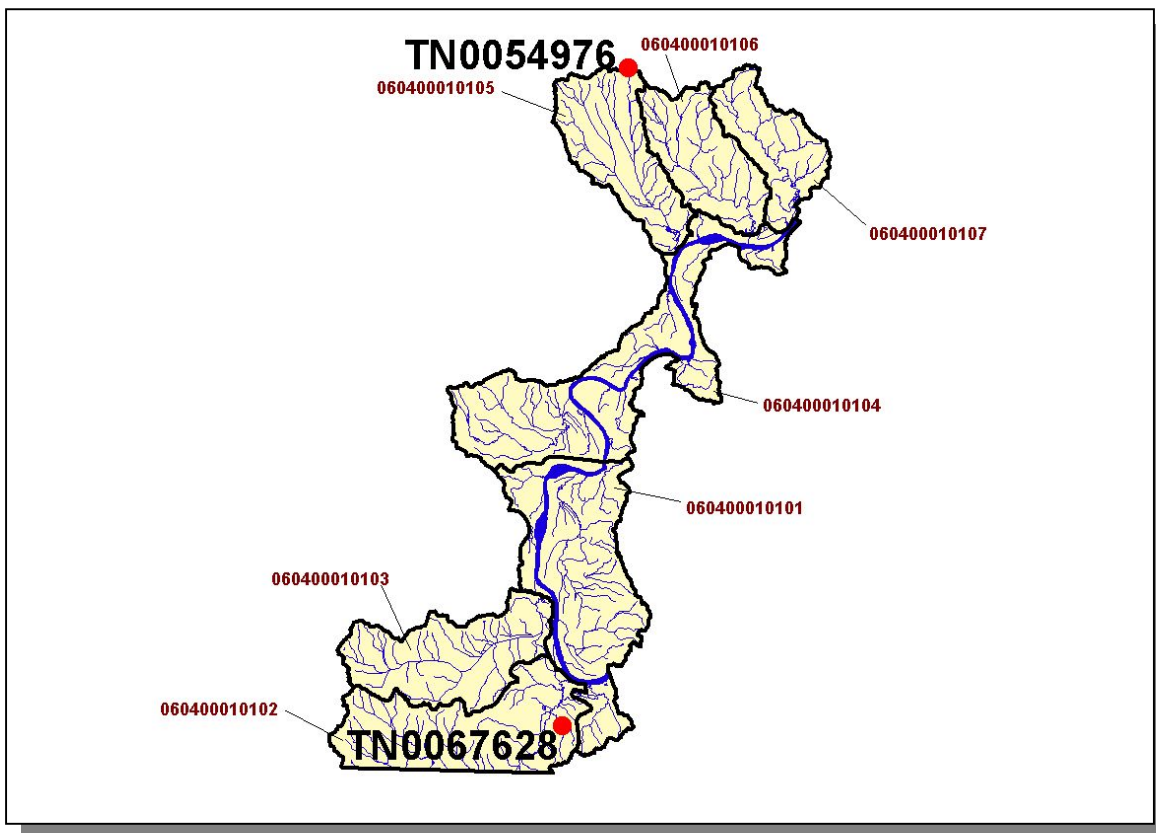


Figure 4-14. Location of NPDES Dischargers to Water Bodies Listed on the 2002 303(d) List in Subwatershed 0604000101. Subwatershed 060400010101, 060400010102, 060400010103, 060400010104, 060400010105, 060400010106, and 060400010107 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0054976			0		
TN0067628					

Table 4-5. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0604000101. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	TSS	pH	OIL and GREASE
TN0067628	X	X	X

Table 4-6. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0604000101.

PERMIT #	CBOD ₅	FECAL COLIFORM	E. COLI	NH ₃	TRC	TSS	SETTLEABLE SOLIDS	DO	pH
TN0054976	X	X	X	X	X	X	X	X	X

Table 4-7. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0604000101. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

4.2.A.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens Sold	Hogs	Sheep
5,229	10,150	12	14	<5	4,098	73

Table 4-8. Summary of Livestock Count Estimates in Subwatershed 0604000101. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hardin	219.9	219.9	6.5	27.6
Henderson	158.5	158.5	3.6	12.8
Total	378.4	378.4	10.1	40.4

Table 4-9. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 0604000101.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	0.41
Grass (Hayland)	0.22
Legumes (Hayland)	0.32
Legumes, Grass (Hayland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.61
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	4.99
Cotton (Row Crops)	3.65
Sorghum (Row Crops)	2.48
Soybeans (Row Crops)	10.46
Wheat (Close-Grown Cropland)	3.44
All Other Close-Grown Cropland	5.50
Other Cropland not Planted	7.09
Conservation Reserve Program Lands	0.33
Non-Agricultural Land Use	0.00
Other Land in Farms	0.43
Farmsteads and Ranch Headquarters	0.30

Table 4-10. Annual Estimated Total Soil Loss in Subwatershed 0604000101.

4.2.B. 0604000102 (Snake Creek).

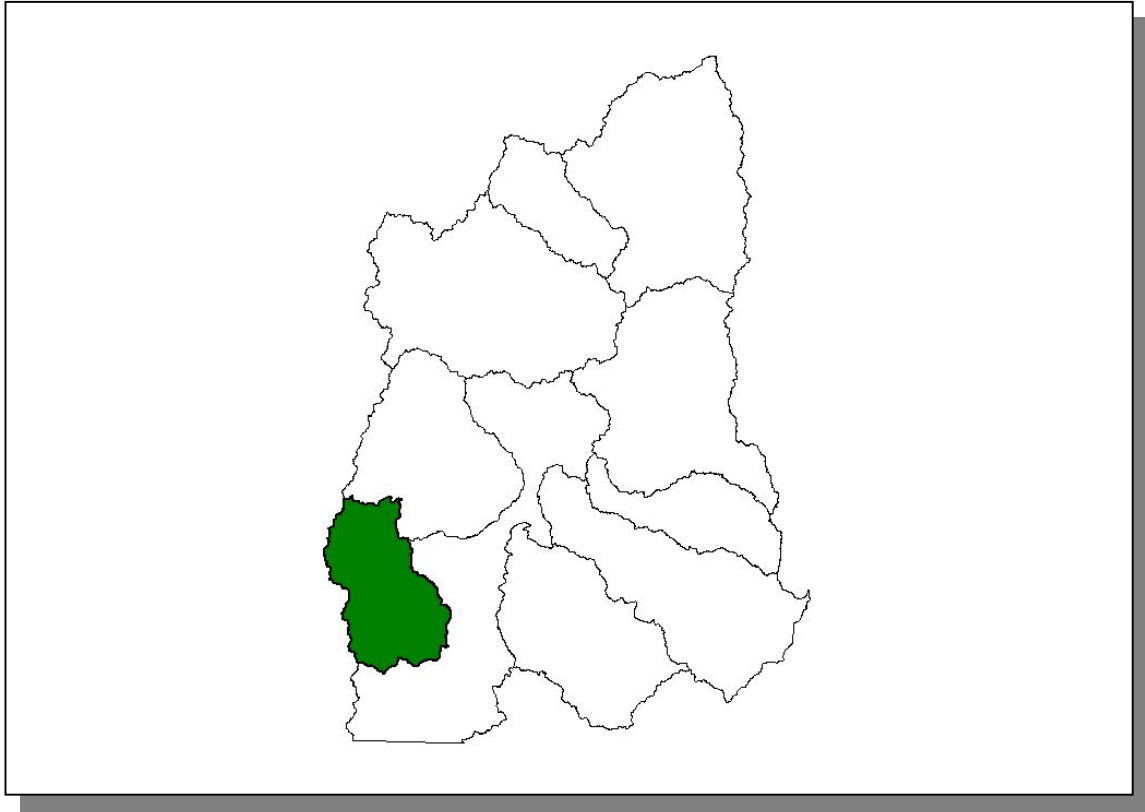


Figure 4-15. Location of Subwatershed 0604000102. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.B.i. General Description.

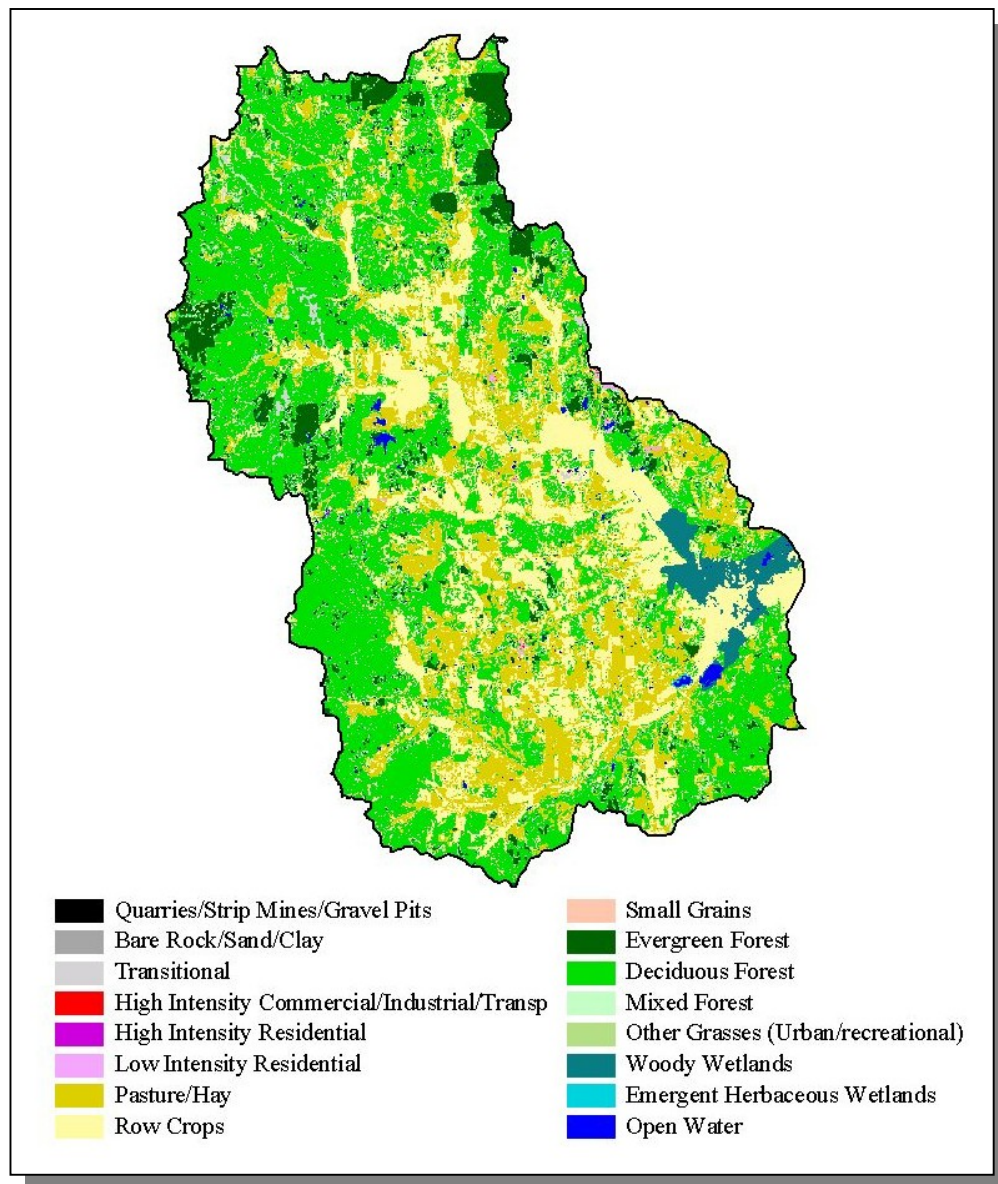


Figure 4-16. Illustration of Land Use Distribution in Subwatershed 0604000102.

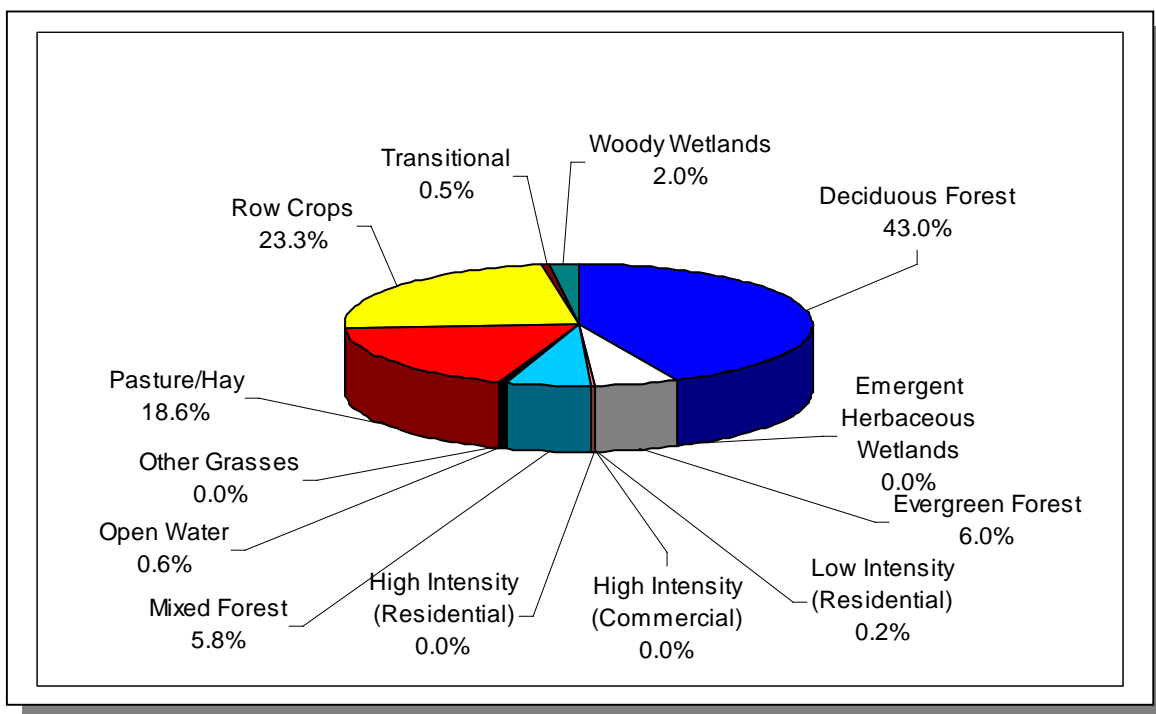


Figure 4-17. Land Use Distribution in Subwatershed 0604000102. More information is provided in Appendix IV.

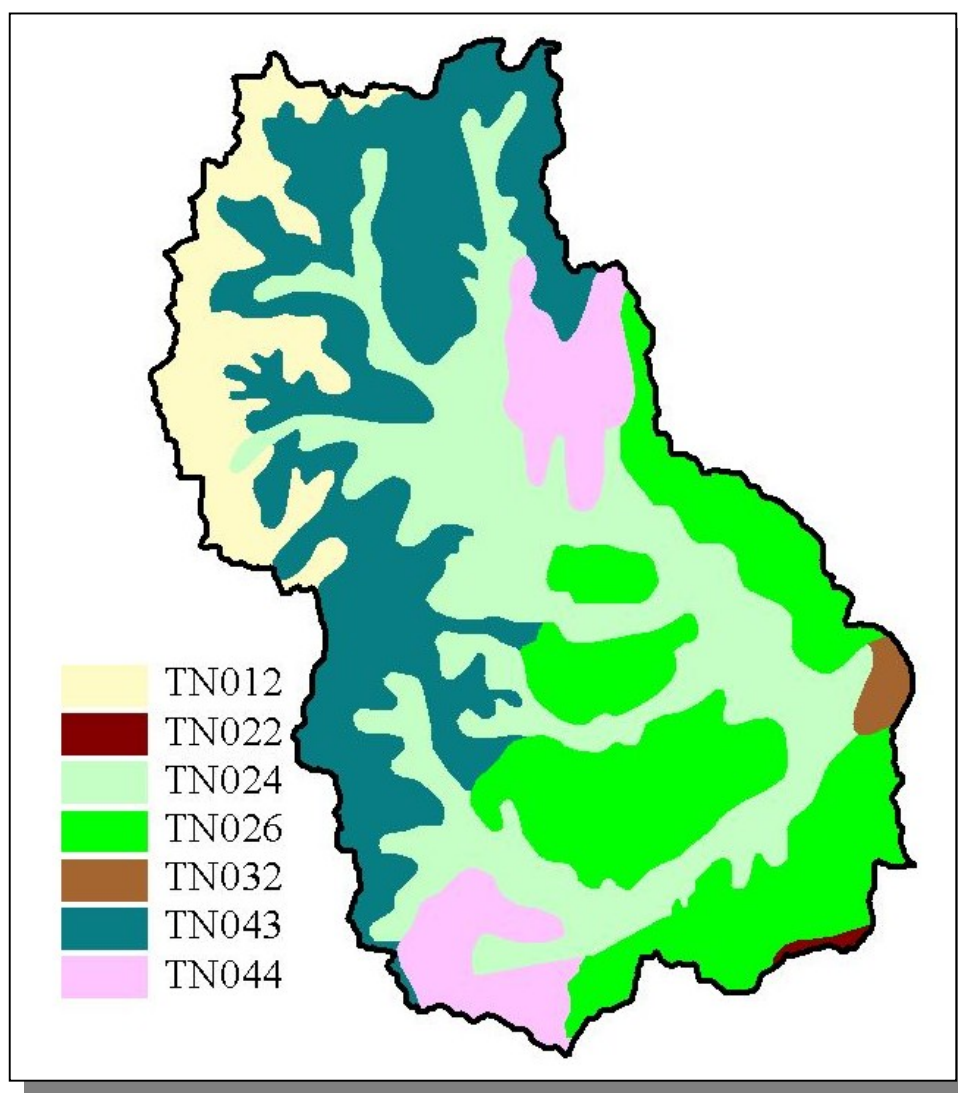


Figure 4-18. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000102.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN012	1.00	C	2.52	5.13	Silty Loam	0.39
TN022	5.00	C	1.98	5.07	Loam	0.37
TN024	61.00	D	2.18	5.35	Loam	0.29
TN026	0.00	B	1.52	5.13	Silty Loam	0.40
TN032	19.00	C	1.21	5.51	Silty Loam	0.37
TN043	0.00	C	2.70	5.02	Loam	0.30
TN044	0.00	C	1.48	5.32	Silty Loam	0.42

Table 4-11. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000102. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Hardin	22,633	24,816	25,578	2.78	630	691	712	13.0
McNairy	22,422	23,678	24,653	19.93	4,469	4,719	4,914	10.0
Totals	45,055	48,494	50,231		5,099	5,410	5,626	10.3

Table 4-12. Population Estimates in Subwatershed 0604000102.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Adamsville	McNairy	1,745	764	606	154	4

Table 4-13. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000102.

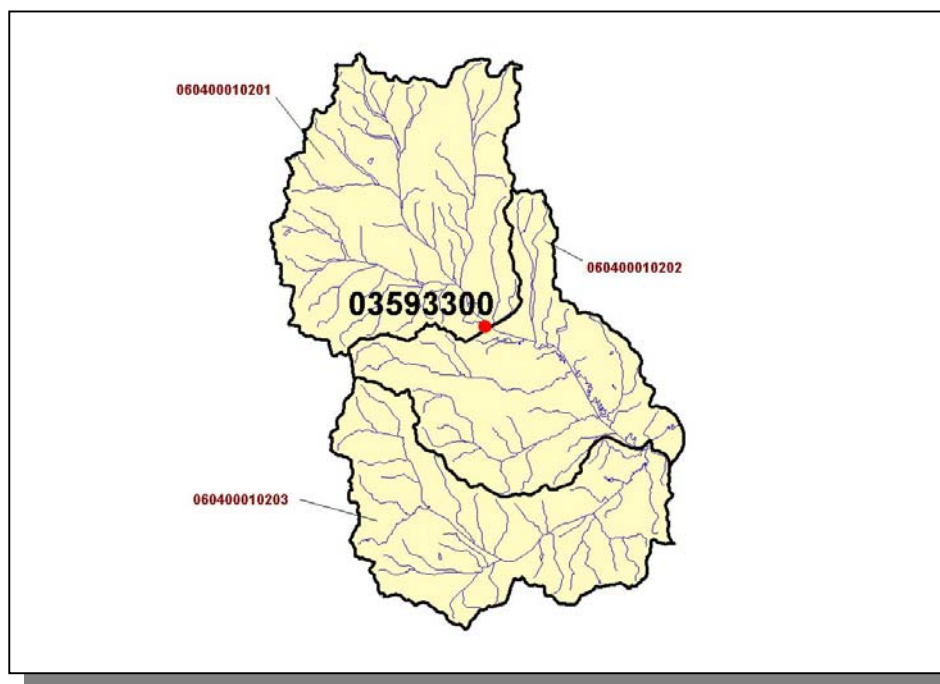


Figure 4-19. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information is provided in Appendix IV.

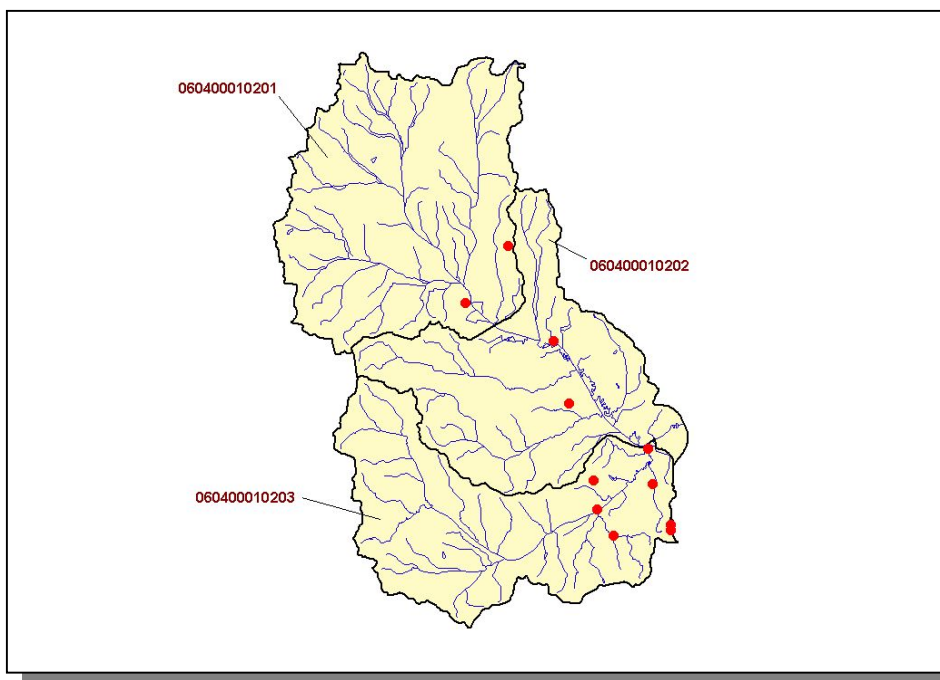


Figure 4-20. Location of STORET Monitoring Sites in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.B.ii. Point Source Contributions.

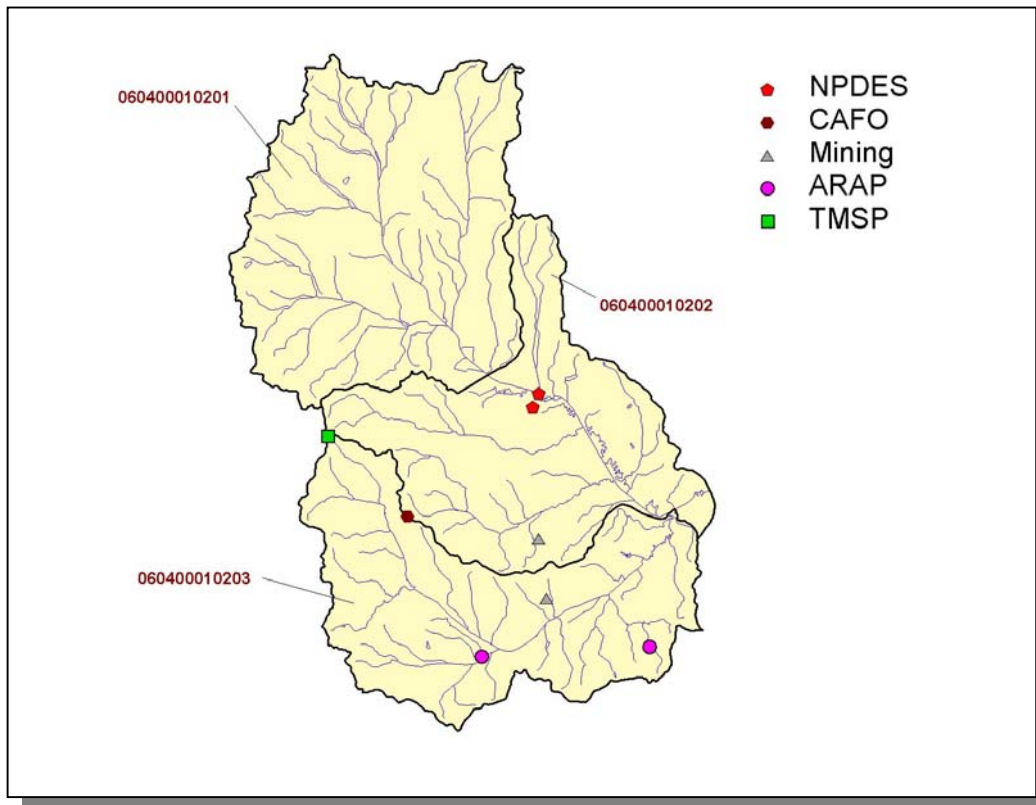


Figure 4-21. Location of Active Point Source Facilities in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

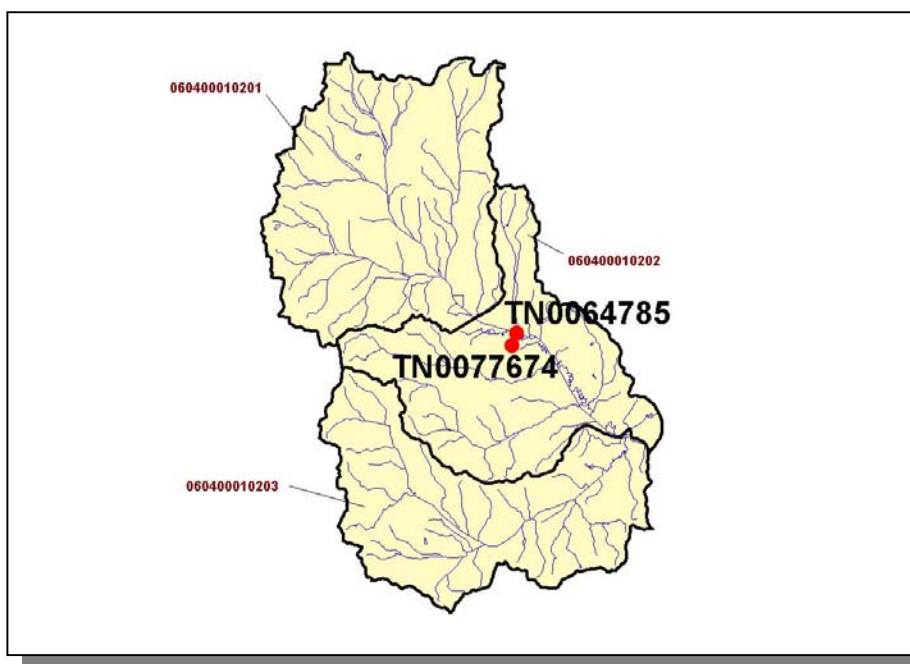


Figure 4-22. Location of NPDES Facilities in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

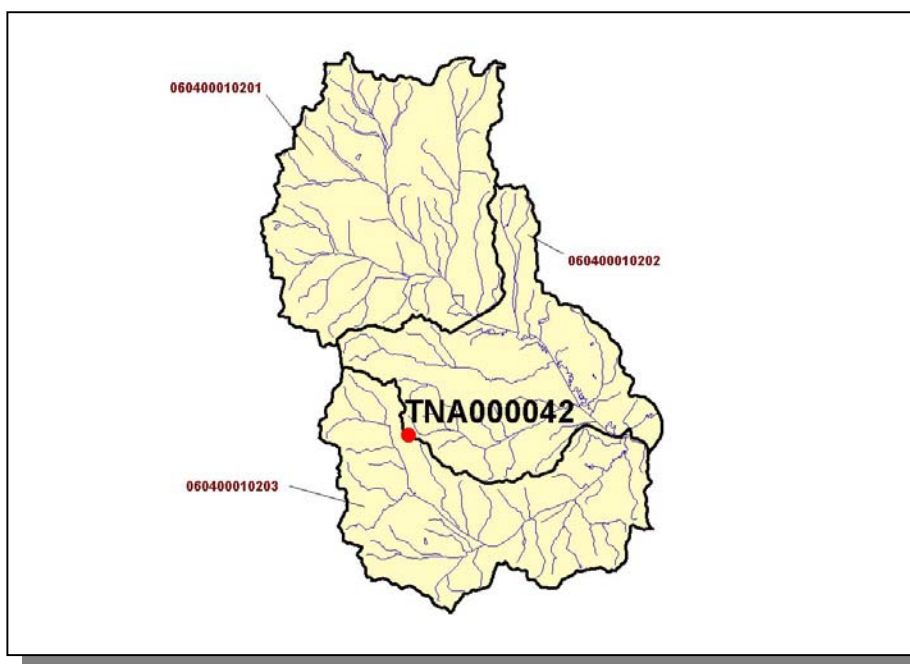


Figure 4-23. Location of Concentrated Animal Feeding Operations (CAFO) in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

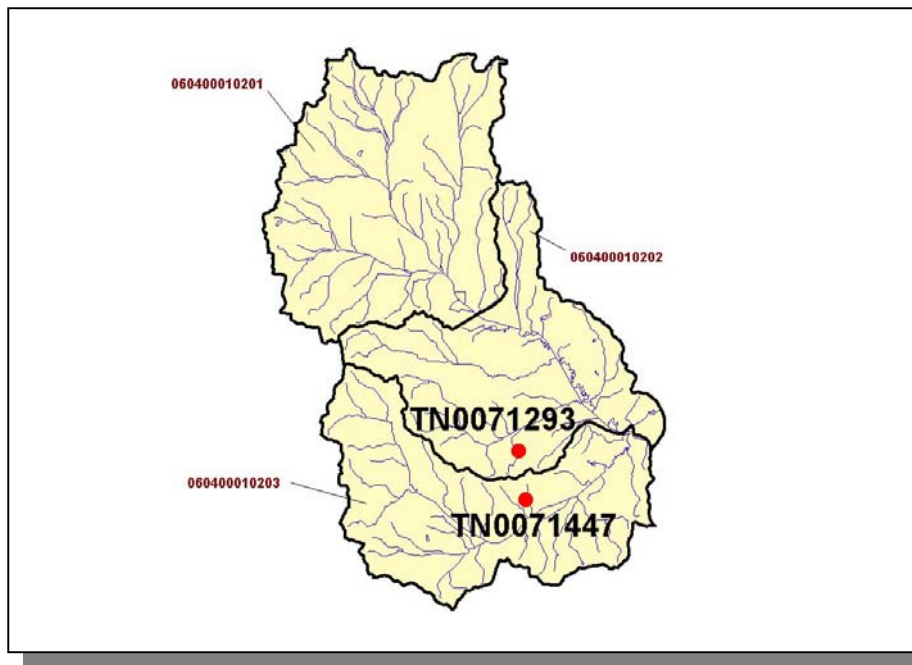


Figure 4-24. Location of Active Mining Facilities in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

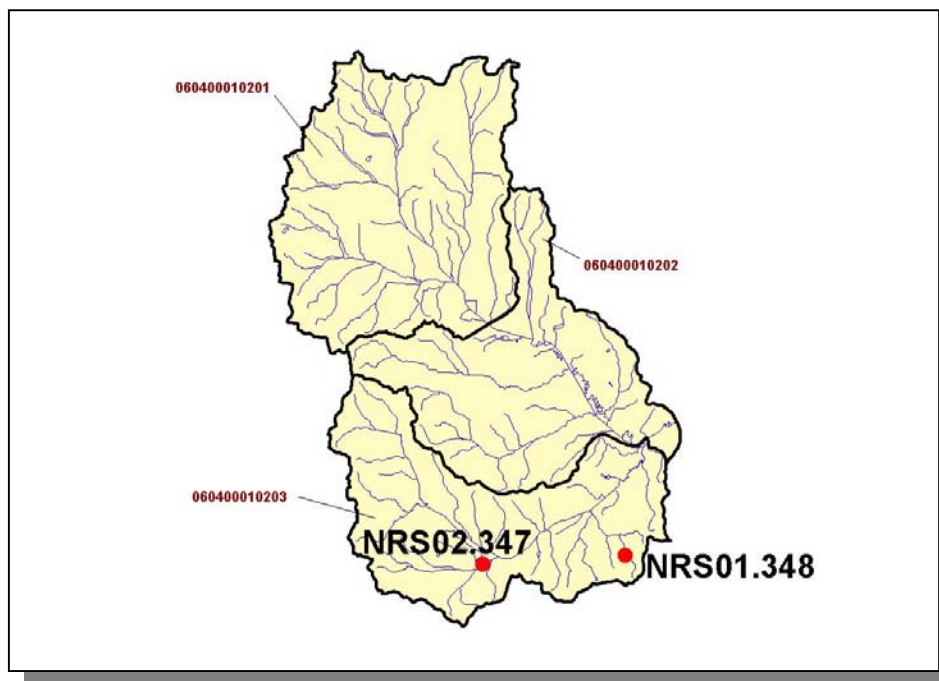


Figure 4-25. Location of ARAP Sites (Individual Permits) in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

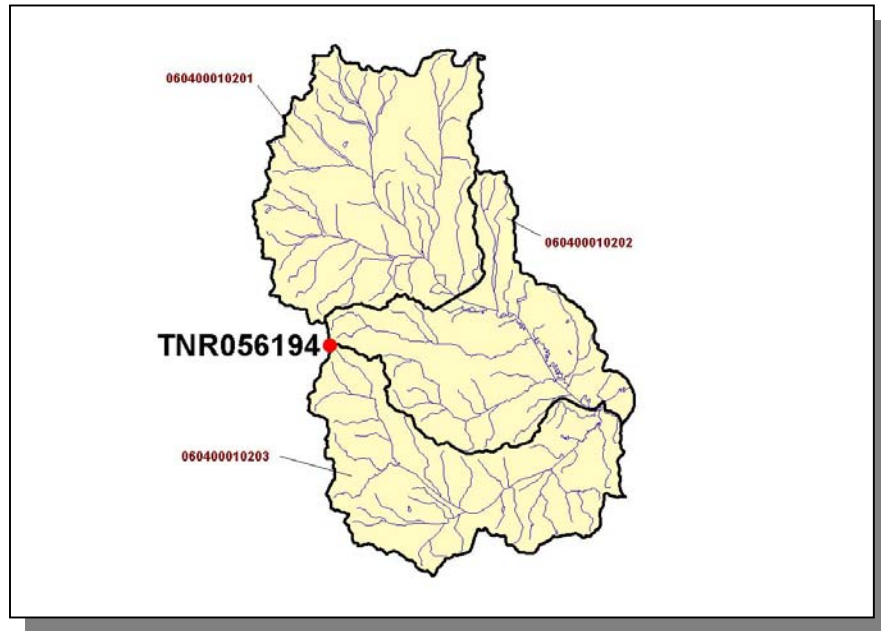


Figure 4-26. Location of TMSF Facilities in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.B.ii.a. Dischargers to Water Bodies Listed on the 2002 303(d) List

There is one NPDES facility discharging to water bodies listed on the 2002 303(d) list in Subwatershed 0604000102:

- TN0064785 (Adamsville STP) discharges to Snake Creek @ RM 8.0



Figure 4-27. Location of NPDES Dischargers to Water Bodies Listed on the 2002 303(d) List in Subwatershed 0604000102. Subwatershed 060400010201, 060400010202, and 060400010203 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0064785	0.2	0.2	0.3	0.1	0.299

Table 4-14. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0604000102. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	CBOD ₅	FECAL COLIFORM	TRC	TSS	SETTLEABLE SOLIDS	DO	pH
TN0064785	X	X	X	X	X	X	X

Table 4-15. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0604000102. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

4.2.B.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens Sold	Hogs	Sheep
2,067	3,811	<5	7	<5	3,807	35

Table 4-16. Summary of Livestock Count Estimates in Subwatershed 0604000102.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hardin	219.9	219.9	6.5	27.6

Table 4-17. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0604000102.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.50
Grass (Hayland)	0.09
Legumes (Hayland)	0.12
Legumes, Grass (Hayland)	0.12
Grass, Forbs, Legumes (Mixed Pasture)	0.56
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	10.10
Cotton (Row Crops)	5.09
Sorghum (Row Crops)	3.62
Soybeans (Row Crops)	10.20
Wheat (Close-Grown Cropland)	2.18
All Other Close-Grown Cropland	5.50
Other Cropland not Planted	3.21
Conservation Reserve Program Lands	0.29
Non-Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.14

Table 4-18. Annual Estimated Total Soil Loss in Subwatershed 0604000102.

4.2.C. 0604000103 (Horse Creek).

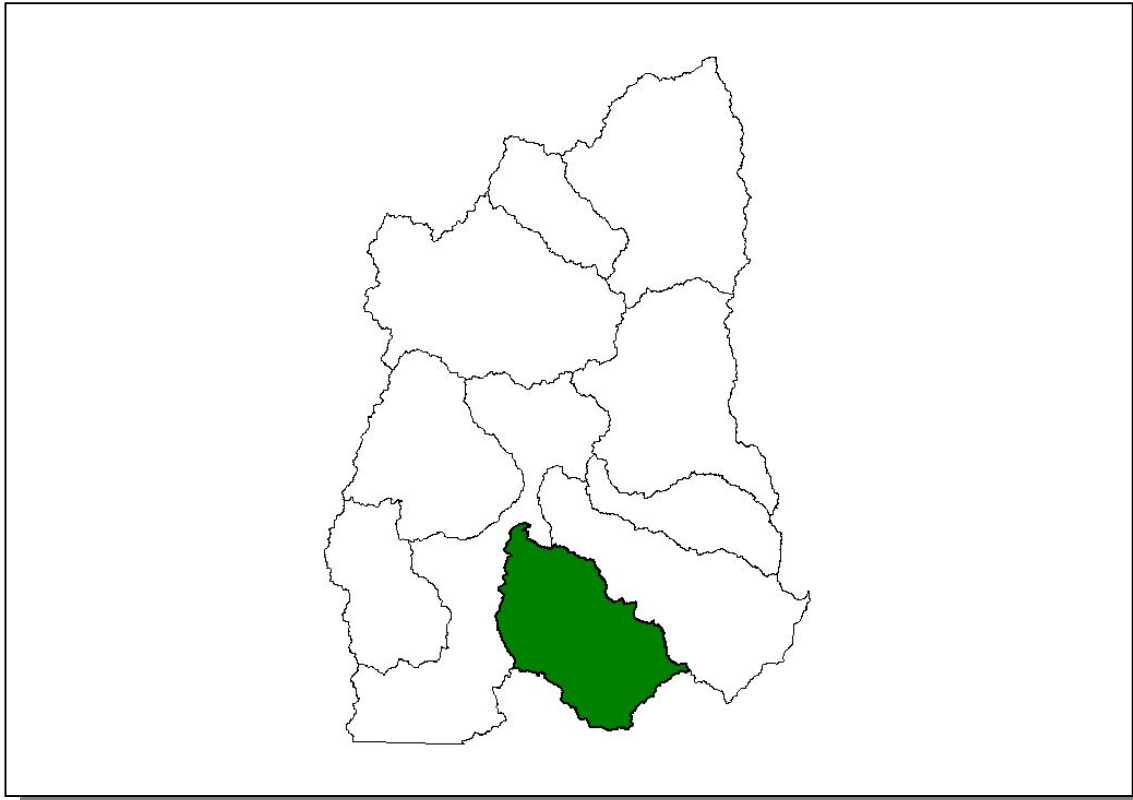


Figure 4-28. Location of Subwatershed 0604000103. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.C.i. General Description.

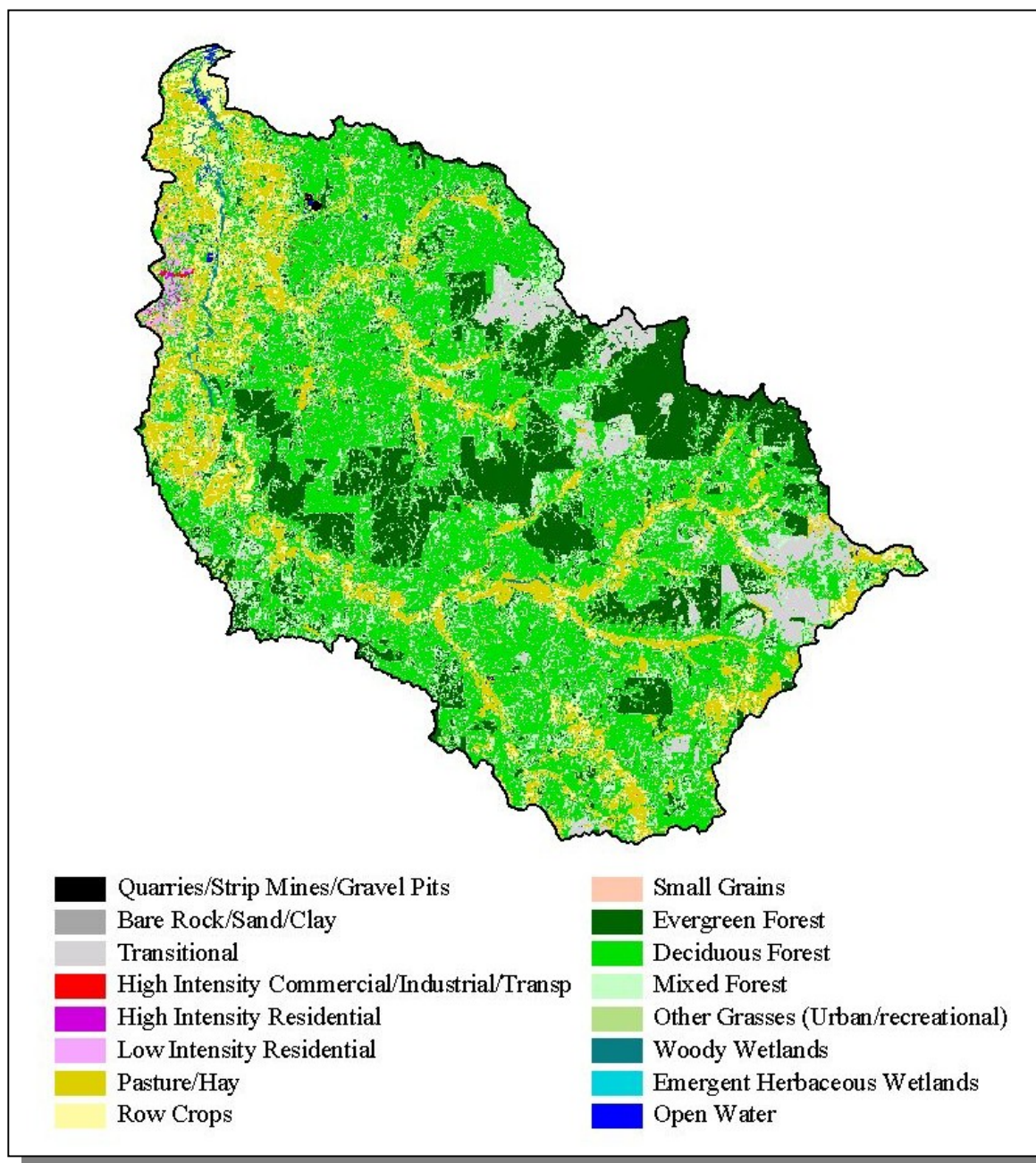


Figure 4-29. Illustration of Land Use Distribution in Subwatershed 0604000103.

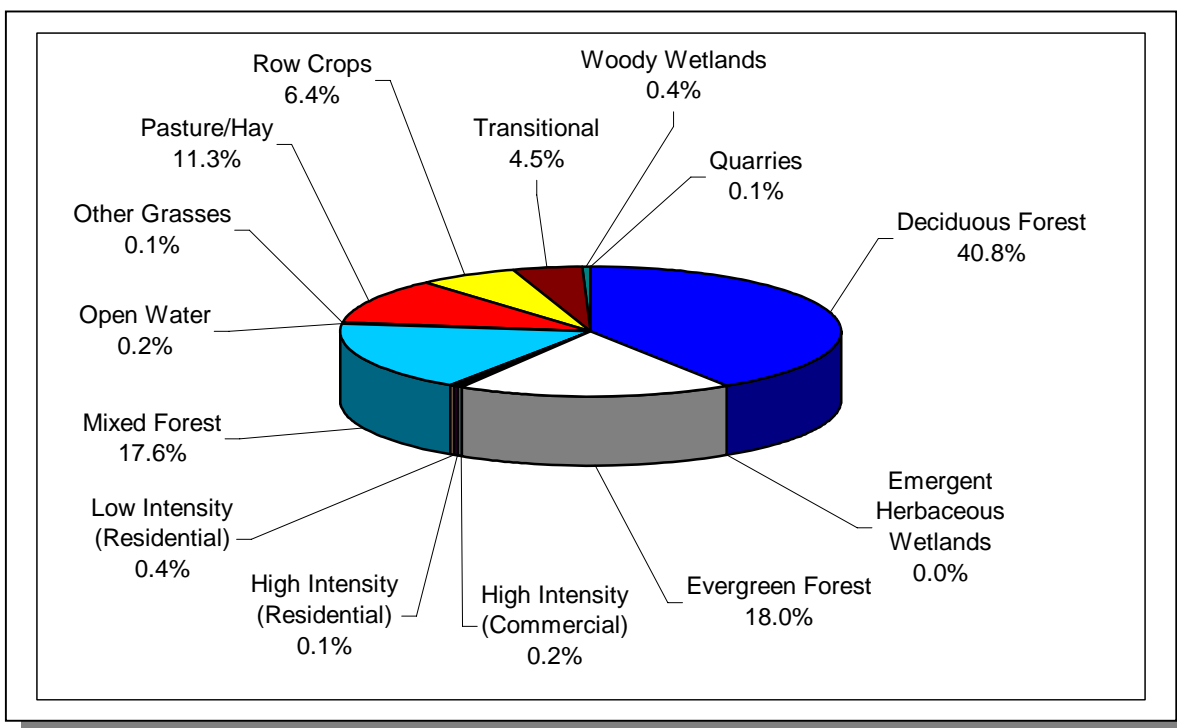


Figure 4-30. Land Use Distribution in Subwatershed 0604000103. More information is provided in Appendix IV.

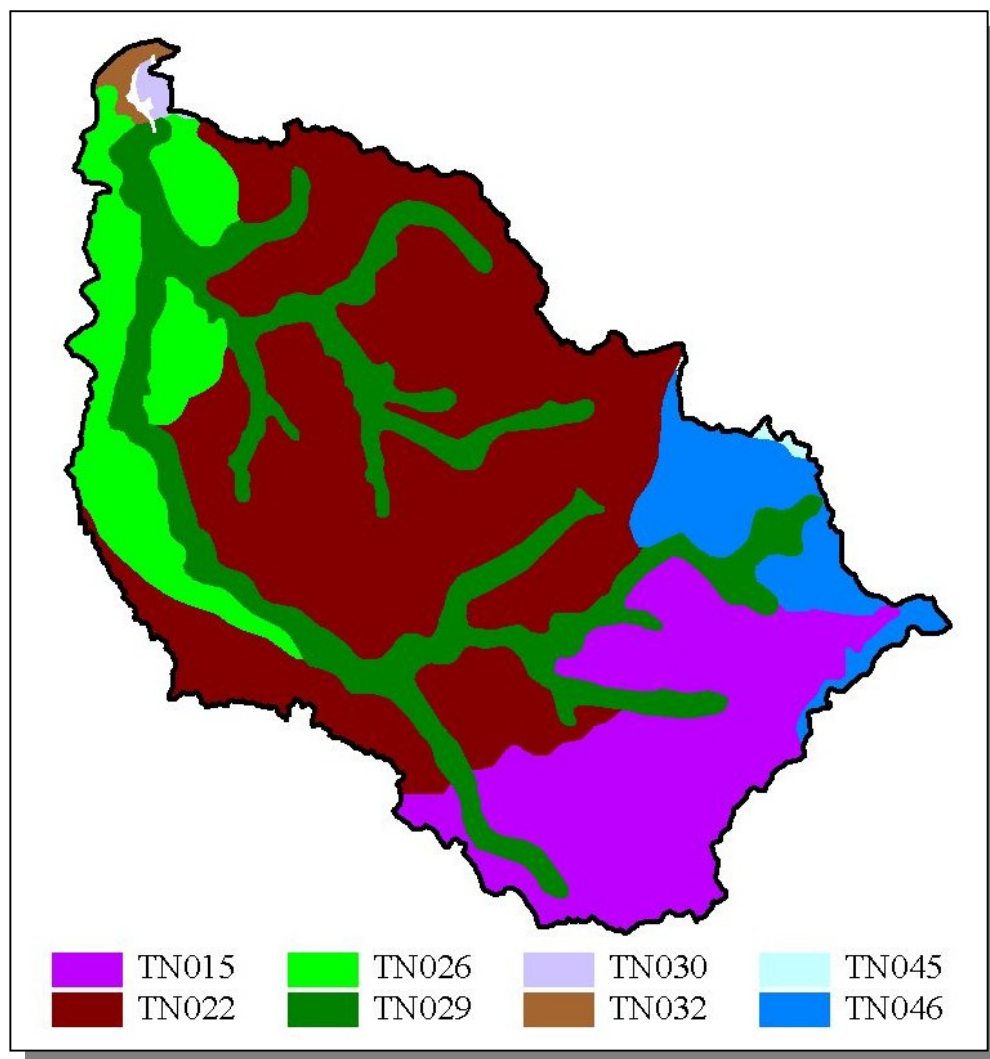


Figure 4-31. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000103.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN015	4.00	C	3.62	4.98	Sandy Loam	0.25
TN022	5.00	C	1.98	5.07	Loam	0.37
TN026	0.00	B	1.52	5.13	Silty Loam	0.40
TN029	8.00	C	2.96	5.40	Loam	0.33
TN030	2.00	B	1.84	5.06	Loam	0.33
TN032	19.00	C	1.21	5.51	Silty Loam	0.37
TN045	0.00	B	1.95	5.45	Loam	0.35
TN046	0.00	B	1.98	5.09	Silty Loam	0.38

Table 4-19. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000103. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Hardin	22,633	24,816	25,578	30.48	6,898	7,563	7,796	13.0
Wayne	13,935	16,498	16,842	1.52	211	250	255	20.9
Totals	36,568	41,314	42,420		7,109	7,813	8,051	13.3

Table 4-20. Population Estimates in Subwatershed 0604000103.

Populated Place	County	Population	Total	NUMBER OF HOUSING UNITS		
				Public Sewer	Septic Tank	Other
Savannah	Hardin	6,569	2,782	2,719	63	0

Table 4-21. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000103.

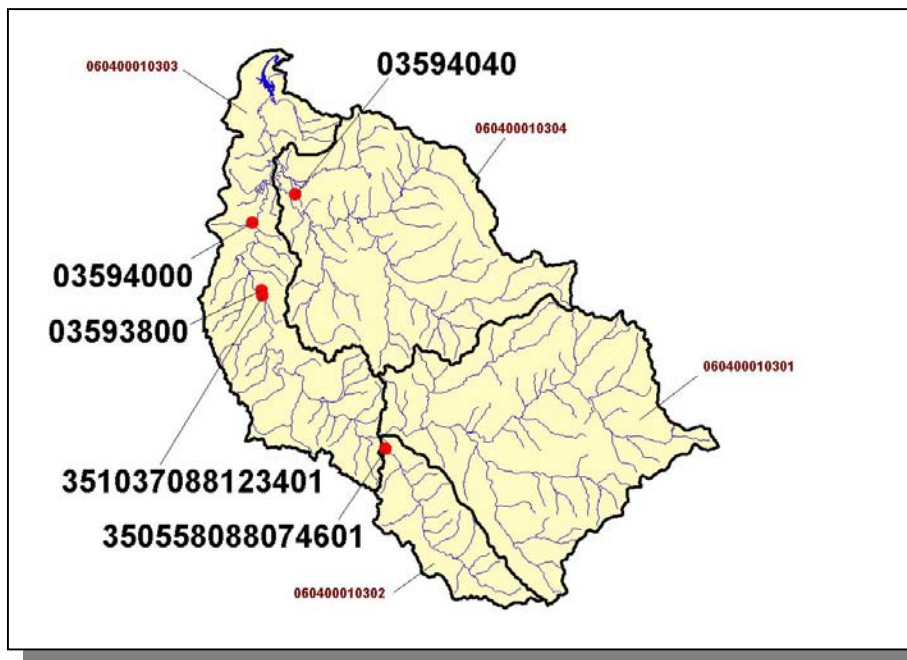


Figure 4-32. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000103. Subwatershed 060400010301, 060400010302, 060400010303, and 060400010304 boundaries are shown for reference. More information is provided in Appendix IV.

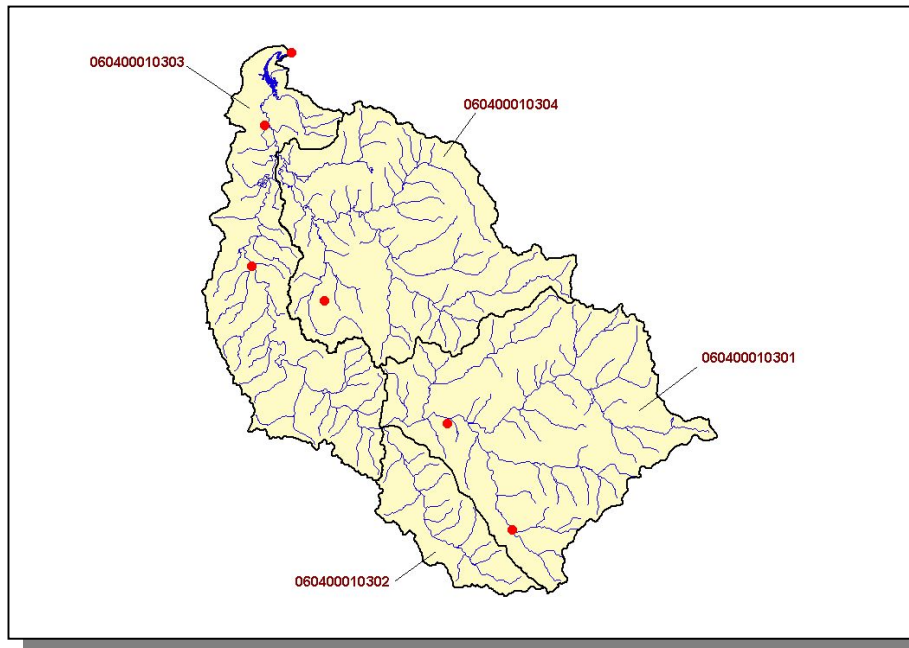


Figure 4-33. Location of STORET Monitoring Sites in Subwatershed 0604000103. Subwatershed 060400010301, 060400010302, 060400010303, and 060400010304 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.C.ii. Point Source Contributions.

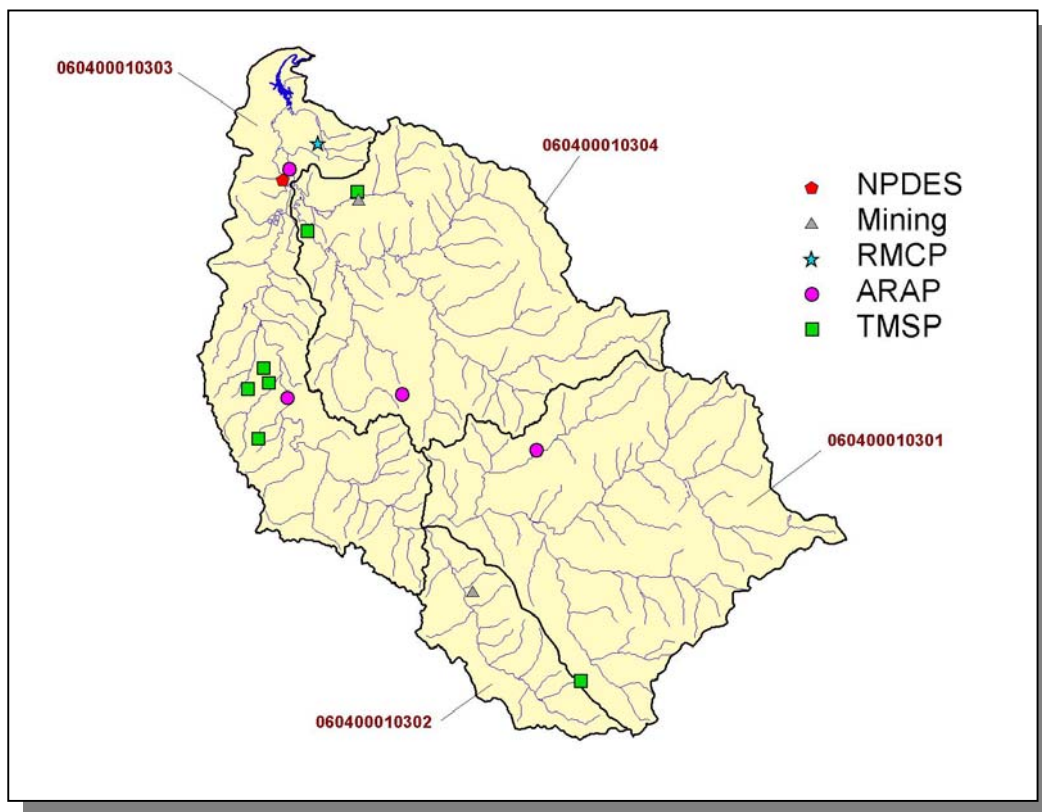


Figure 4-34. Location of Active Point Source Facilities in Subwatershed 0604000103. Subwatershed 0604000103, 0604000103, 0604000103, and 0604000103 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

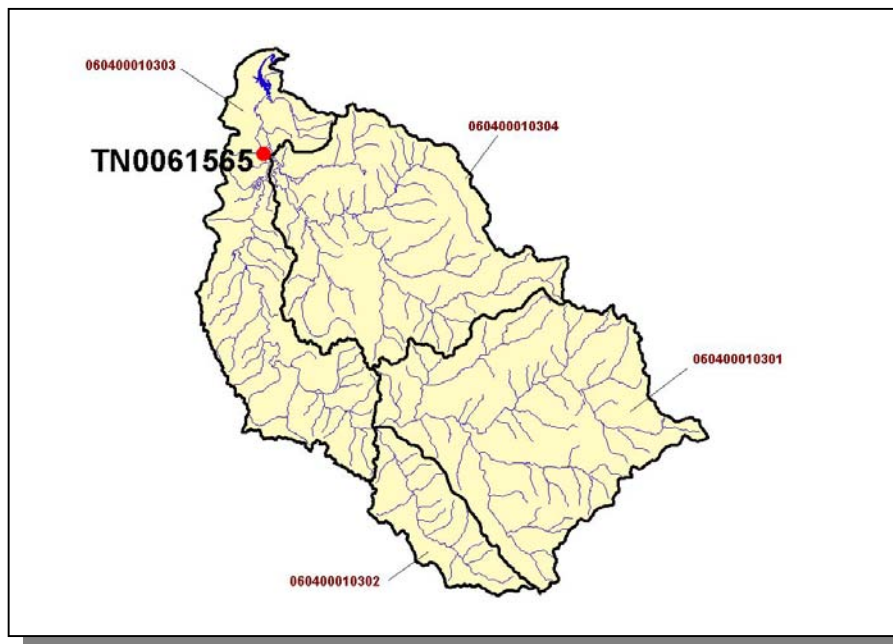


Figure 4-35. Location of NPDES Facilities in Subwatershed 0604000103. Subwatershed 0604000103, 0604000103, 0604000103, and 0604000103 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

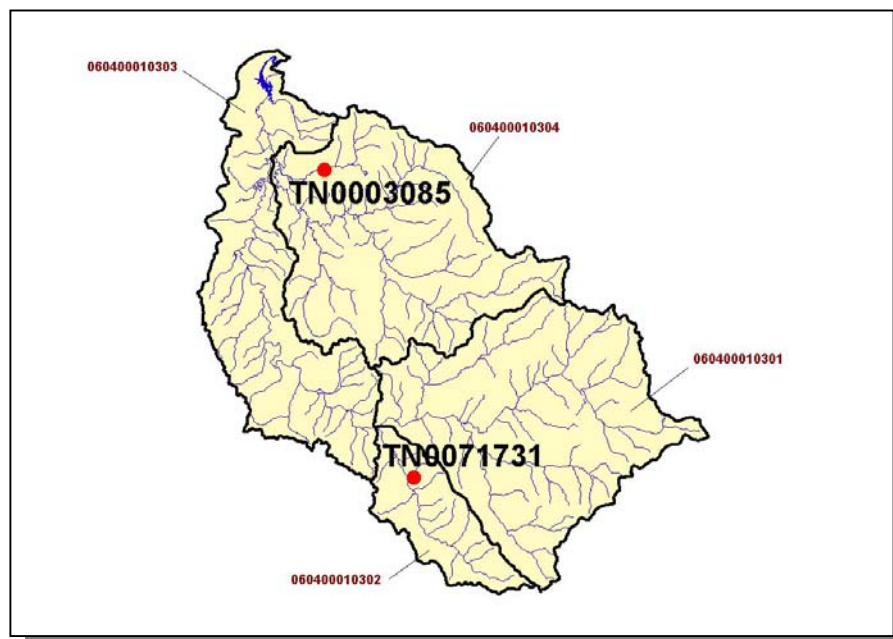


Figure 4-36. Location of Active Mining Facilities in Subwatershed 0604000103. Subwatershed 0604000103, 0604000103, 0604000103, and 0604000103 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

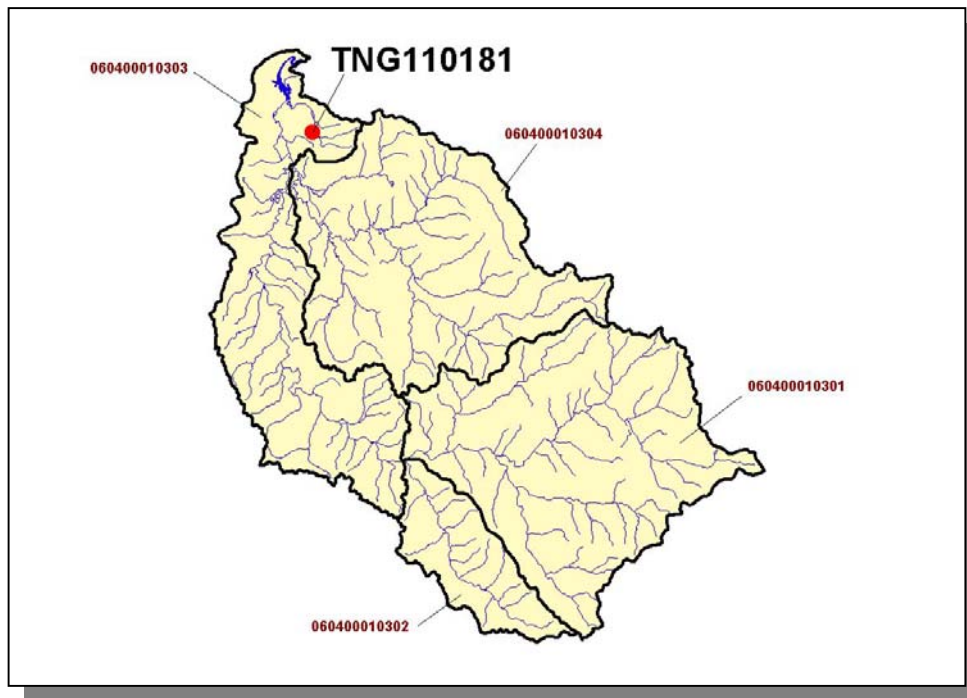


Figure 4-37. Location of Ready Mix Concrete Plants in Subwatershed 0604000103. Subwatershed 0604000103, 0604000103, 0604000103, and 0604000103 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

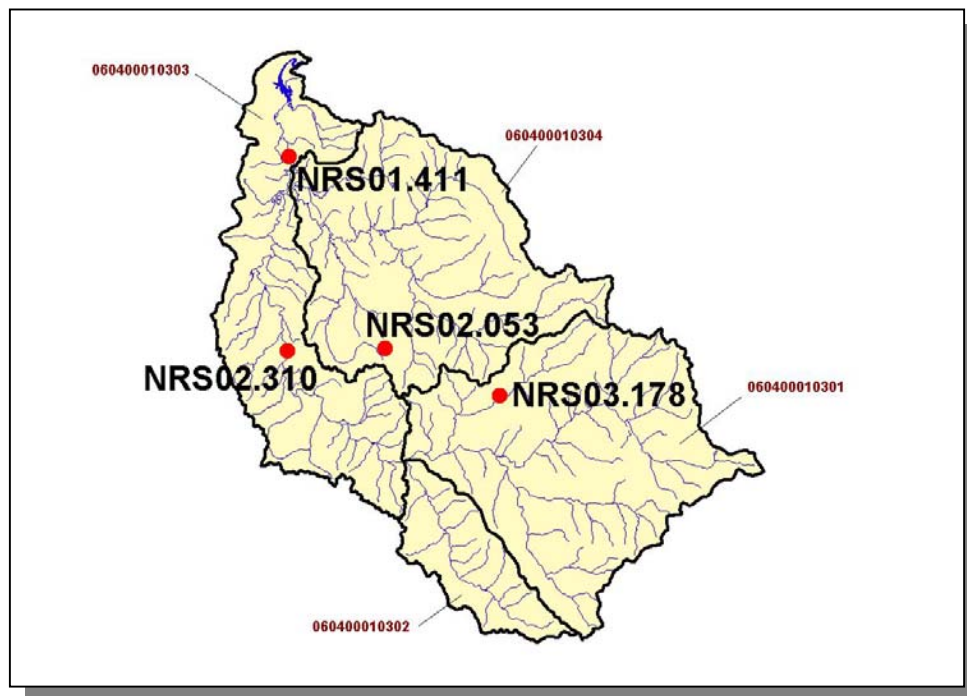


Figure 4-38. Location of ARAP Sites (Individual Permits) in Subwatershed 0604000103. Subwatershed 0604000103, 0604000103, 0604000103, and 0604000103 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

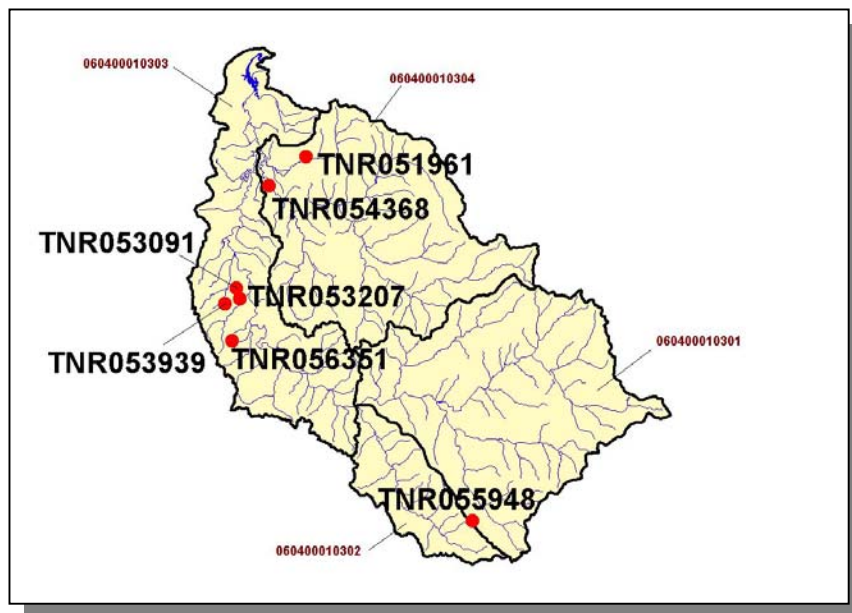


Figure 4-39. Location of TMSP Facilities in Subwatershed 0604000103. Subwatershed 0604000103, 0604000103, 0604000103, and 0604000103 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.C.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
2,053	3,942	<5	6	<5	1,053	26

Table 4-22. Summary of Livestock Count Estimates in Subwatershed 0604000103. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hardin	219.9	219.9	6.5	27.6
Wayne	372.6	392.6	14.1	41.1
Totals	592.5	592.5	20.6	68.7

Table 4-23. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0604000103.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.15
Grass (Hayland)	0.30
Legumes, Grass (Hayland)	0.46
Grass, Forbs, Legumes (Mixed Pasture)	0.44
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	4.15
Cotton (Row Crops)	2.63
Soybeans (Row Crops)	13.10
Wheat (Close-Grown Cropland)	3.93
All Other Close-Grown Cropland	5.50
Other Cropland not Planted	9.54
Conservation Reserve Program Lands	0.35
Non-Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.39

Table 4-24. Annual Estimated Total Soil Loss in Subwatershed 0604000103.

4.2.D. 0604000104 (White Oak Creek).

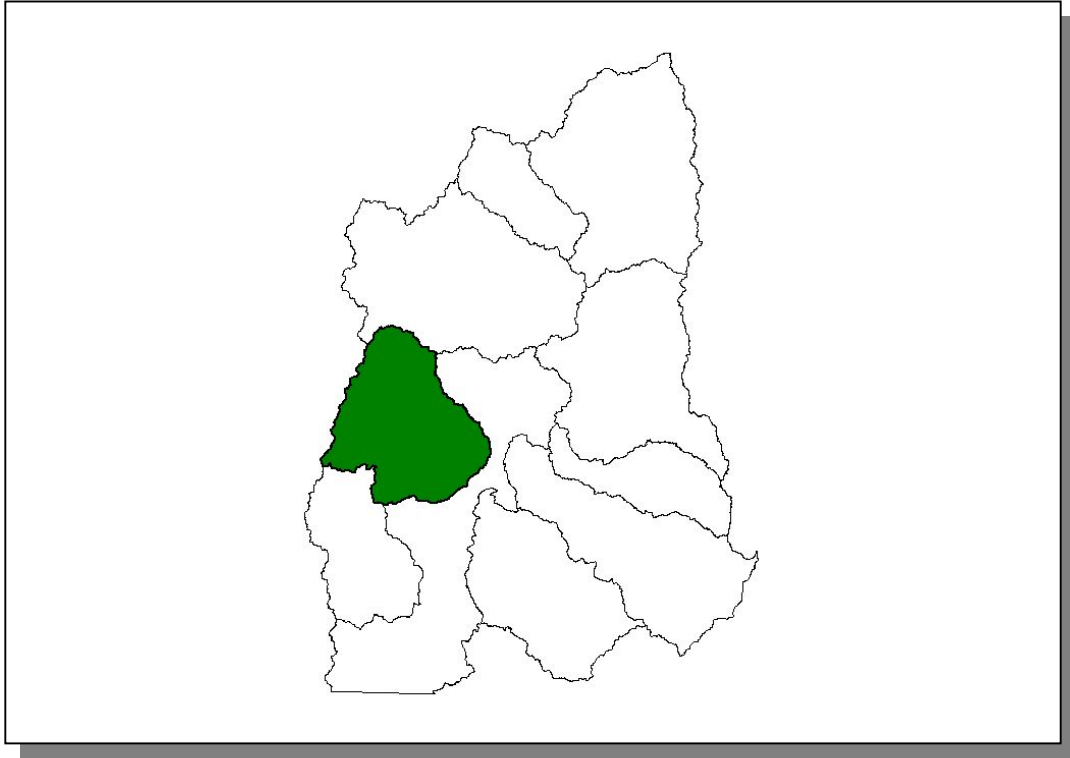


Figure 4-40. Location of Subwatershed 0604000104. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.D.i. General Description.

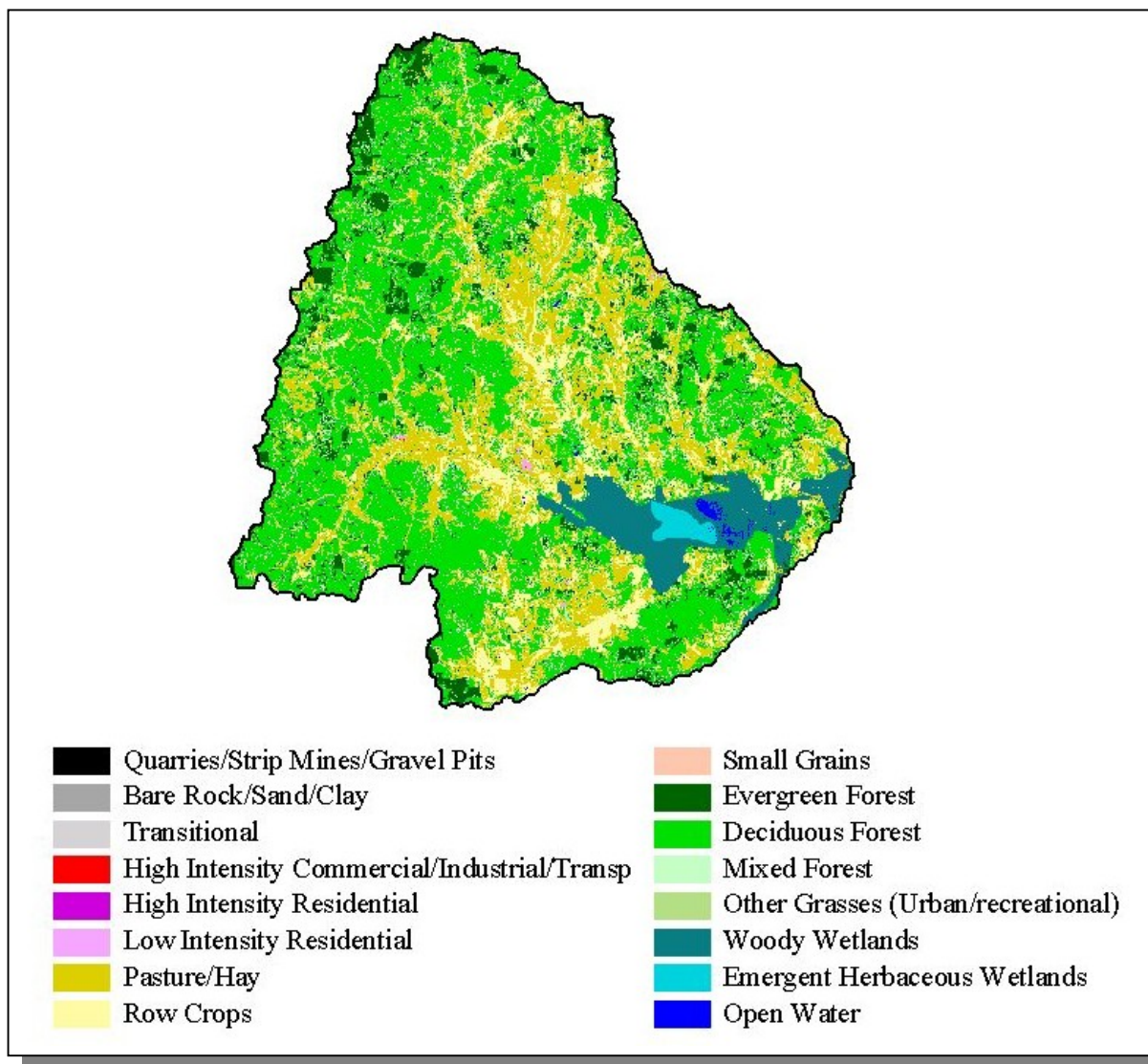


Figure 4-41. Illustration of Land Use Distribution in Subwatershed 0604000104.

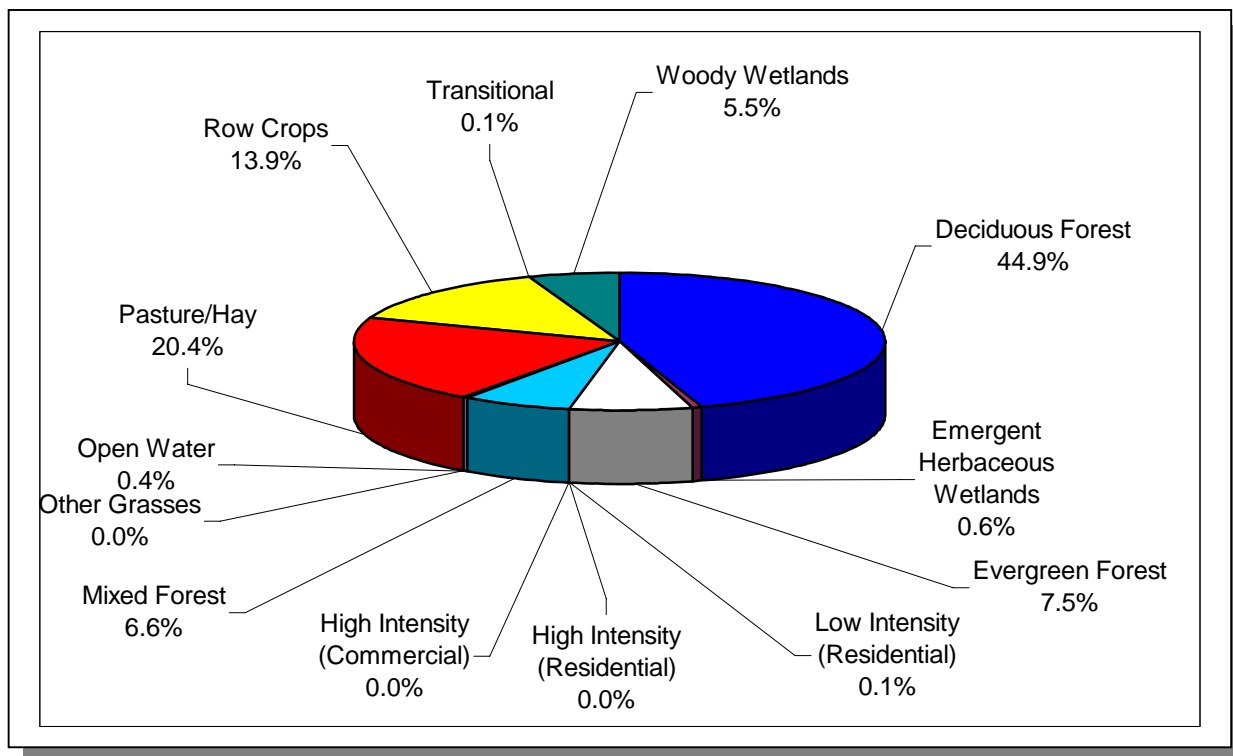


Figure 4-42. Land Use Distribution in Subwatershed 0604000104. More information is provided in Appendix IV.

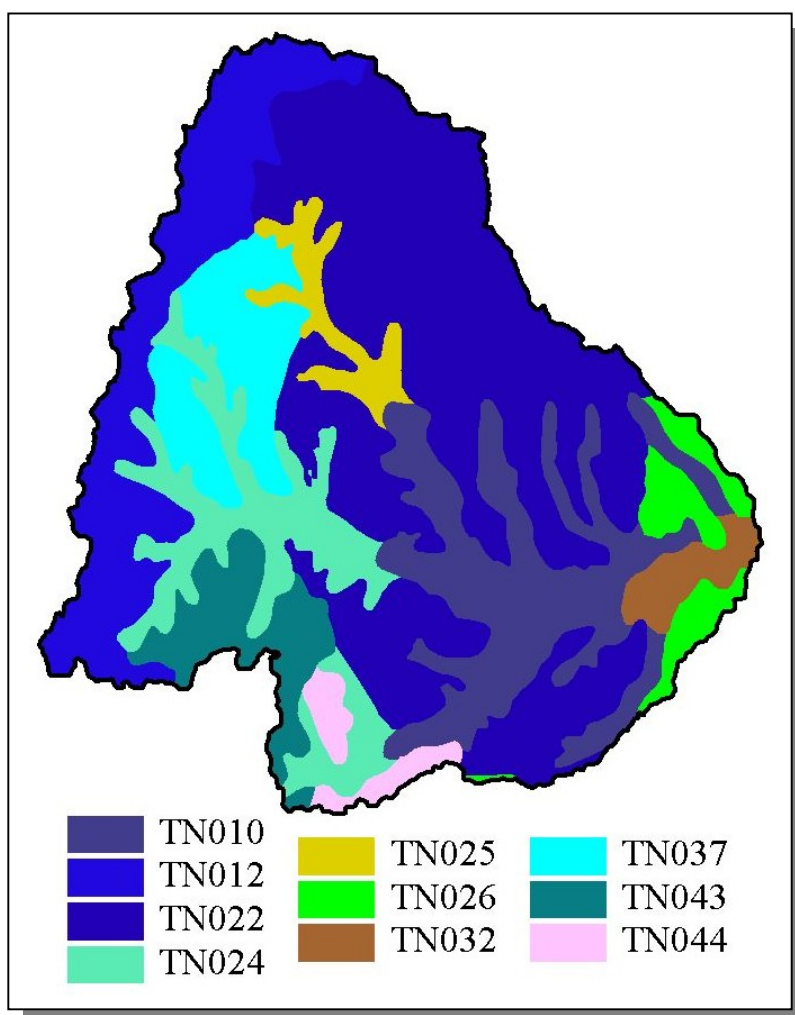


Figure 4-43. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000104.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN010	81.00	C	1.33	5.11	Silty Loam	0.44
TN012	1.00	C	2.52	5.13	Silty Loam	0.39
TN022	5.00	C	1.98	5.07	Loam	0.37
TN024	61.00	D	2.18	5.35	Loam	0.29
TN025	53.00	C	2.00	5.52	Loam	0.25
TN026	0.00	B	1.52	5.13	Silty Loam	0.40
TN032	19.00	C	1.21	5.51	Silty Loam	0.37
TN037	0.00	C	3.51	4.86	Sandy Loam	0.27
TN043	0.00	C	2.70	5.02	Loam	0.30
TN044	0.00	C	1.48	5.32	Silty Loam	0.42

Table 4-25. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000104. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Chester	12,819	14,469	15,540	15.90	2,041	2,303	2,474	21.2
Hardin	22,633	24,816	25,578	12.23	2,767	3,034	3,127	13.0
Henderson	21,844	24,000	25,522	6.36	1,389	1,526	1,623	16.8
McNairy	22,422	23,678	24,653	7.35	1,648	1,740	1,812	10.0
Totals	79,718	86,963	91,293		7,845	8,603	9,036	15.2

Table 4-26. Population Estimates in Subwatershed 0604000104.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Adamsville	McNairy	1,745	764	606	154	4
Enville	McNairy	196	121	1	117	3
Milledgeville	McNairy	291	154	2	152	0
Sardis	Henderson	315	159	8	151	0
Crump	Hardin	2,006	951	67	873	11
Saltillo	Hardin	377	232	13	194	25
Total		4,930	2,181	697	1,641	43

Table 4-27. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000104.

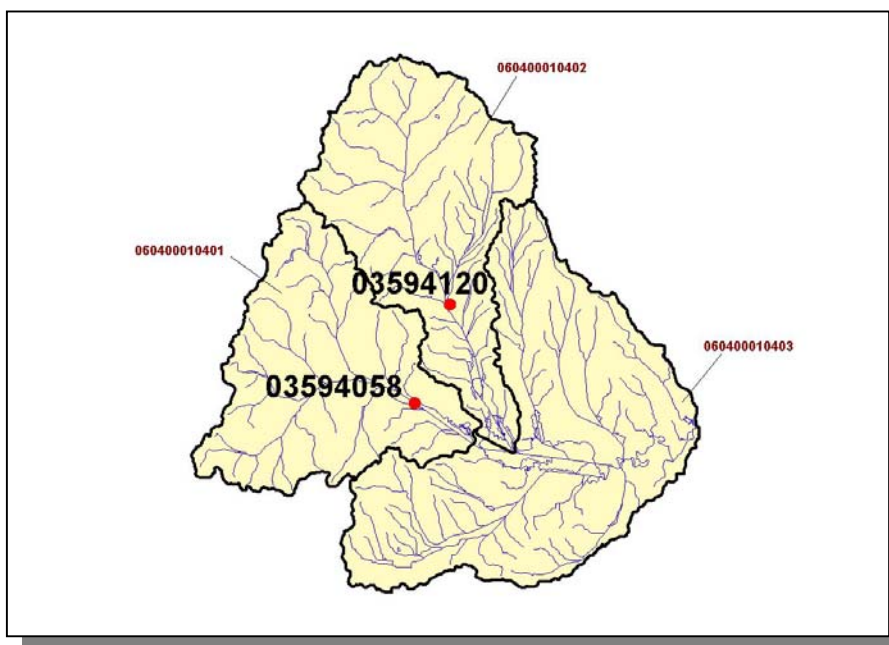


Figure 4-44. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000104. Subwatershed 060400010401, 060400010402, and 060400010403 boundaries are shown for reference. More information is provided in Appendix IV.

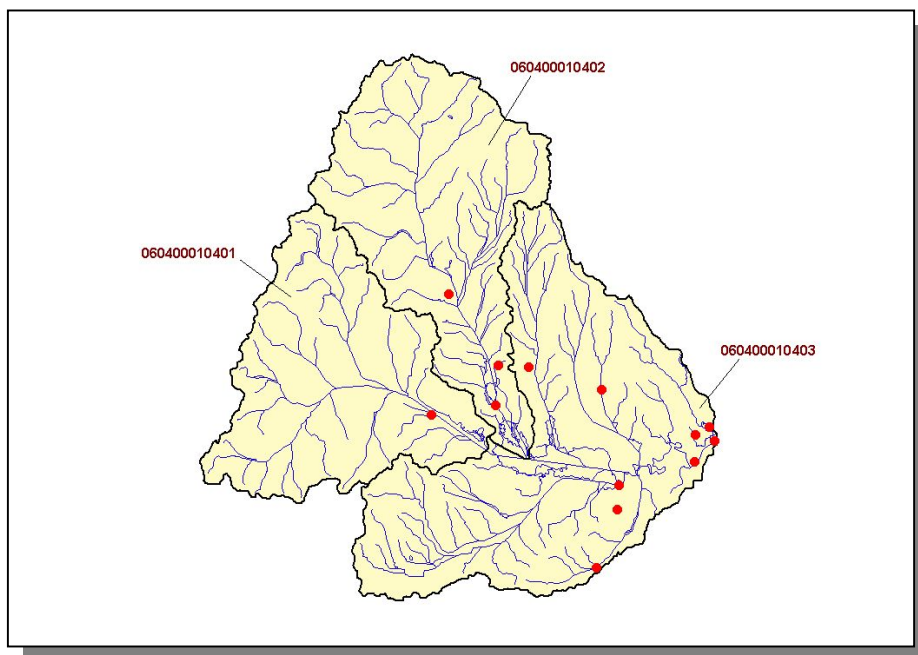


Figure 4-45. Location of STORET Monitoring Sites in Subwatershed 0604000104. Subwatershed 060400010401, 060400010402, and 060400010403 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.D.ii. Point Source Contributions.

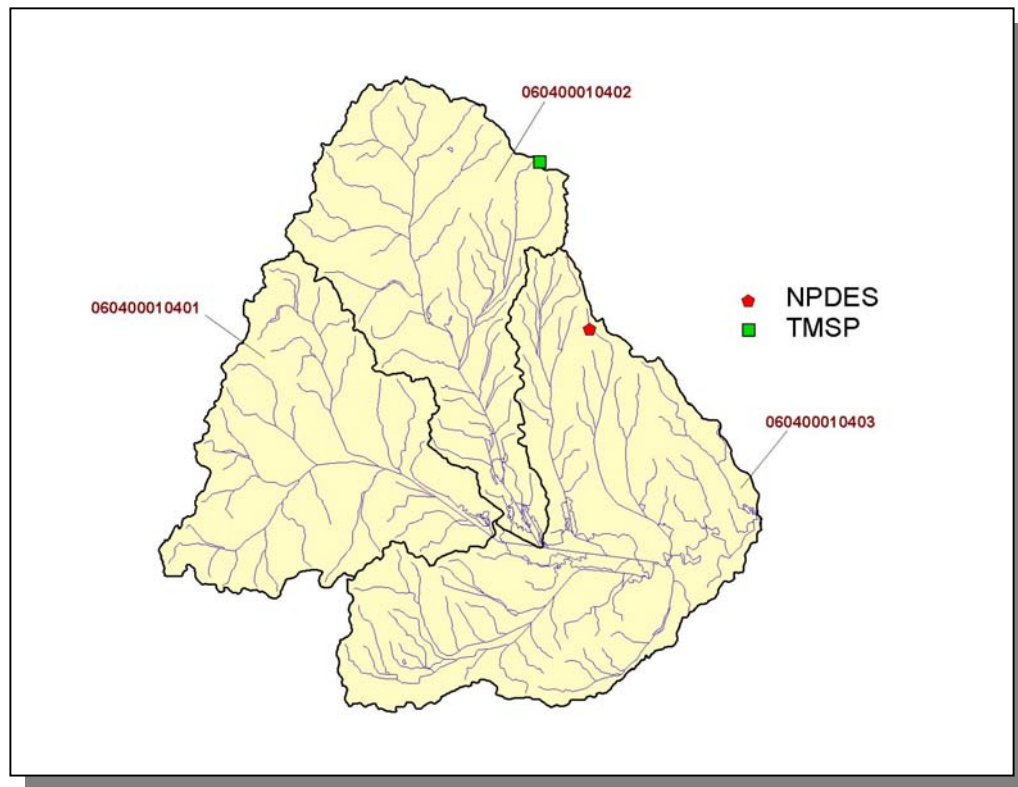


Figure 4-46. Location of Active Point Source Facilities in Subwatershed 0604000104. Subwatershed 0604000104, 0604000104, and 0604000104 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

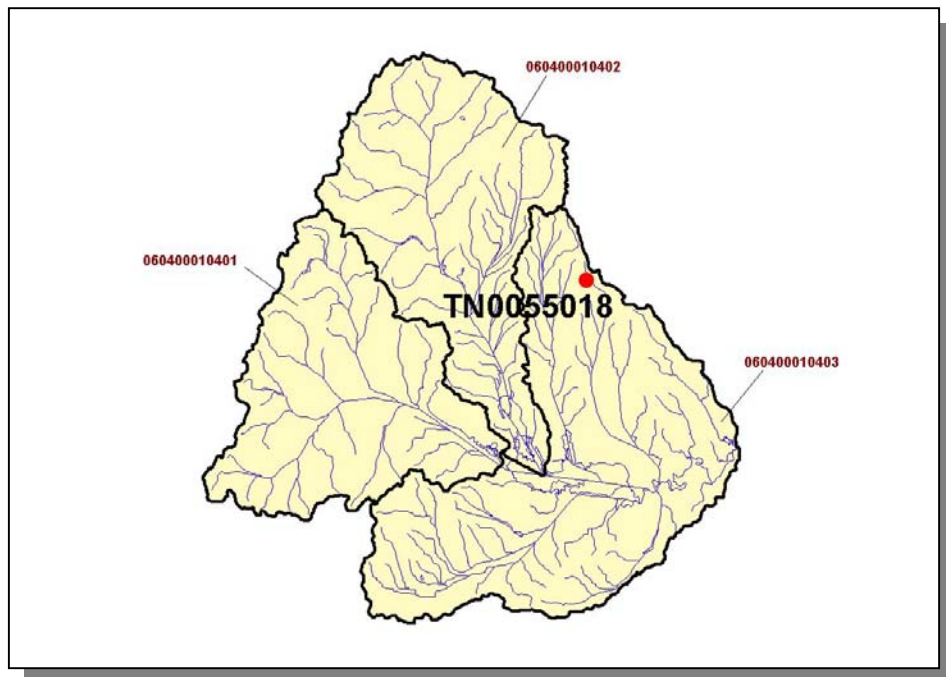


Figure 4-47. Location of NPDES Facilities in Subwatershed 0604000104. Subwatershed 0604000104, 0604000104, and 0604000104 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

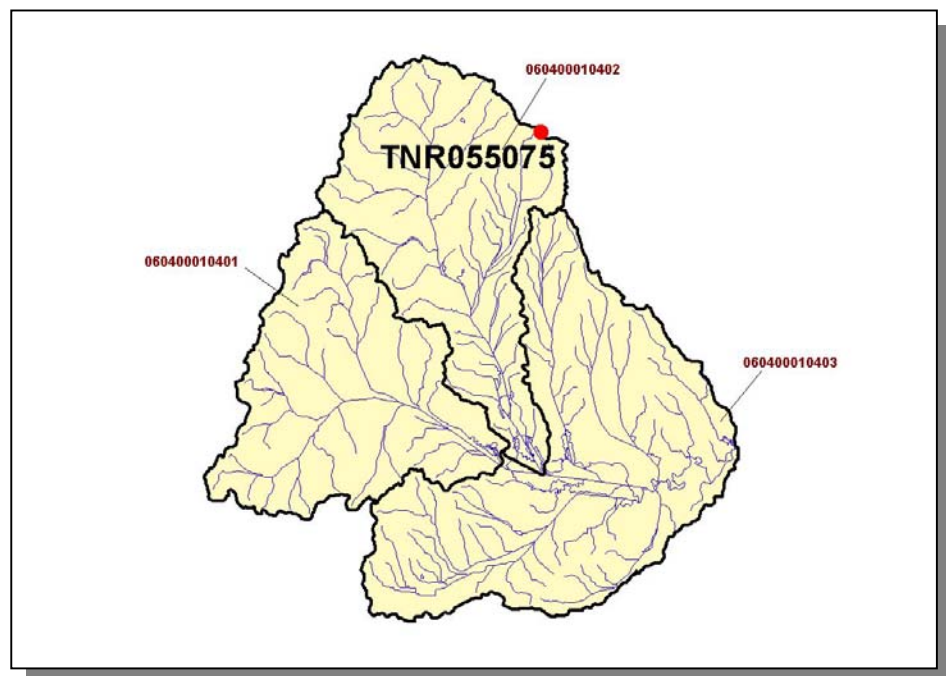


Figure 4-48. Location of TMSP Facilities in Subwatershed 0604000104. Subwatershed 0604000104, 0604000104, and 0604000104 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.D.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Milk Cow	Cattle	Chickens (Layers)	Chickens Sold	Hogs	Sheep
2,935	8	8,454	12	<5	3,271	42

Table 4-28. Summary of Livestock Count Estimates in Subwatershed 0604000104. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Chester	99.4	99.4	0.3	1.3
Hardin	219.9	219.9	6.5	27.6
Henderson	158.5	158.5	3.6	12.8
Total	477.8	477.8	10.4	41.7

Table 4-29. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0604000104.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.40
Grass (Hayland)	0.21
Legumes (Hayland)	0.12
Legumes, Grass (Hayland)	0.29
Grass, Forbs, Legumes (Mixed Pasture)	0.64
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	7.41
Cotton (Row Crops)	7.73
Sorghum (Row Crops)	3.62
Soybeans (Row Crops)	9.54
Wheat (Close-Grown Cropland)	5.32
All Other Close-Grown Cropland	5.50
Other Vegetable and Truck Crops	28.15
Other Cropland not Planted	5.28
Conservation Reserve Program Lands	0.36
Non-Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.26

Table 4-30. Annual Soil Loss in Subwatershed 0604000104.

4.2.E. 0604000105 (Indian Creek).

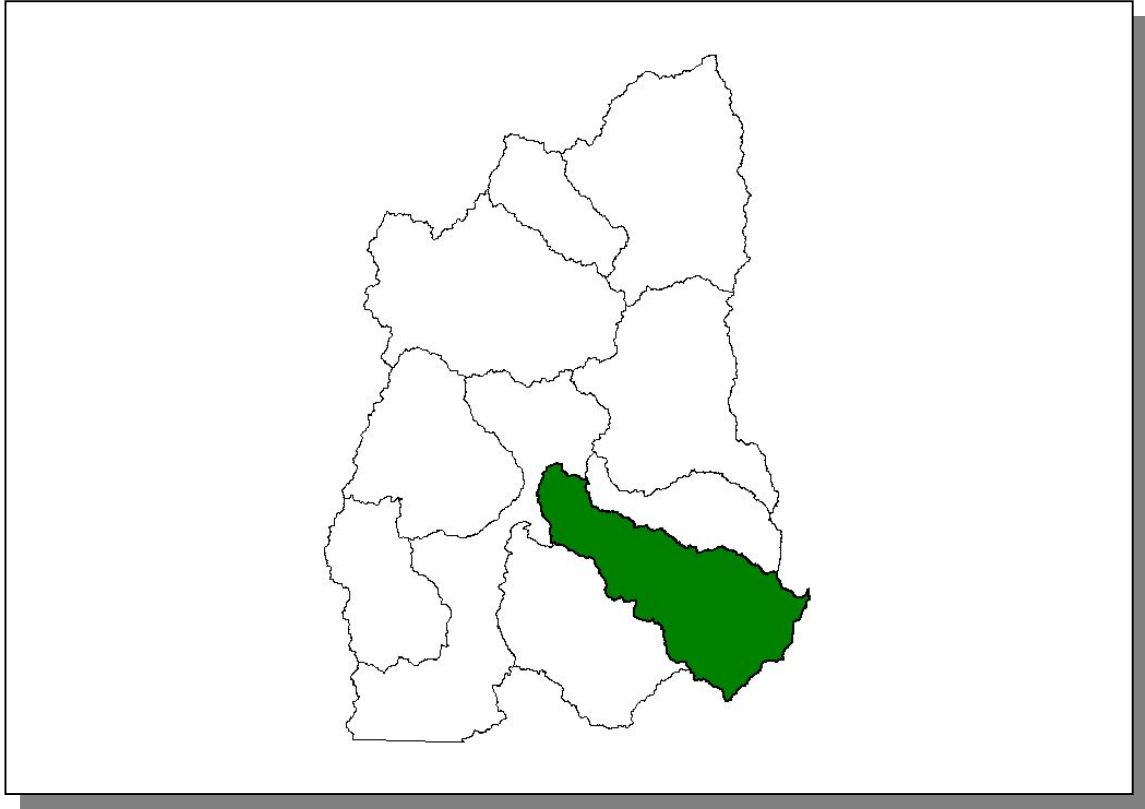


Figure 4-49. Location of Subwatershed 0604000105. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.E.i. General Description.

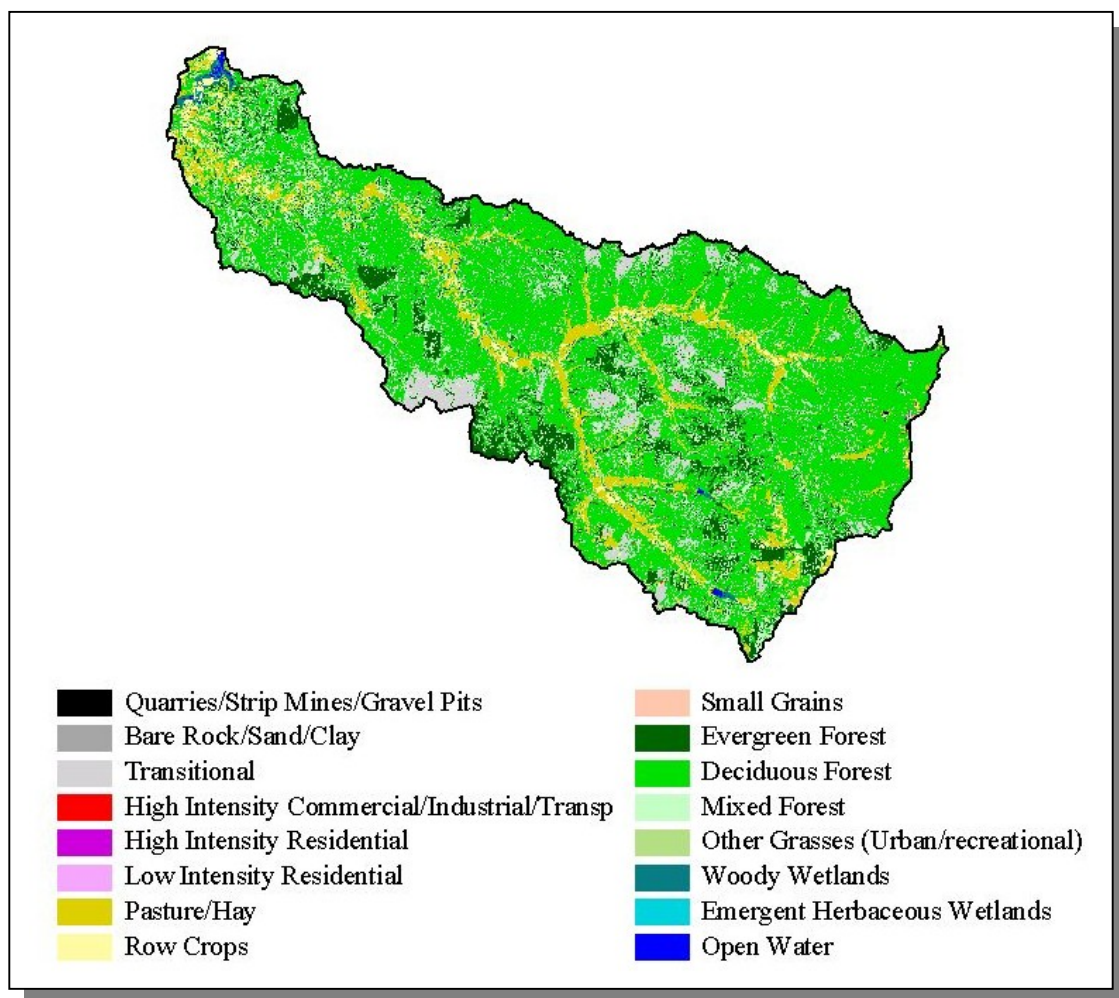


Figure 4-50. Illustration of Land Use Distribution in Subwatershed 0604000105.

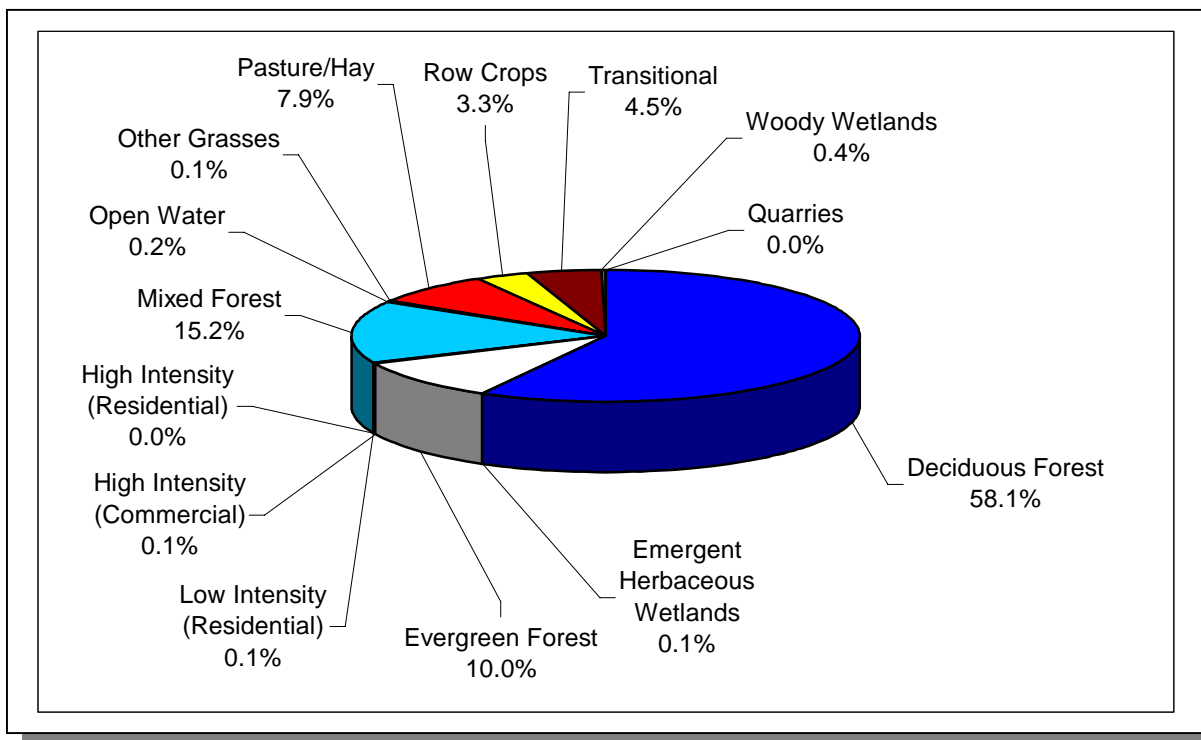


Figure 4-51. Land Use Distribution in Subwatershed 0604000105. More information is provided in Appendix IV.

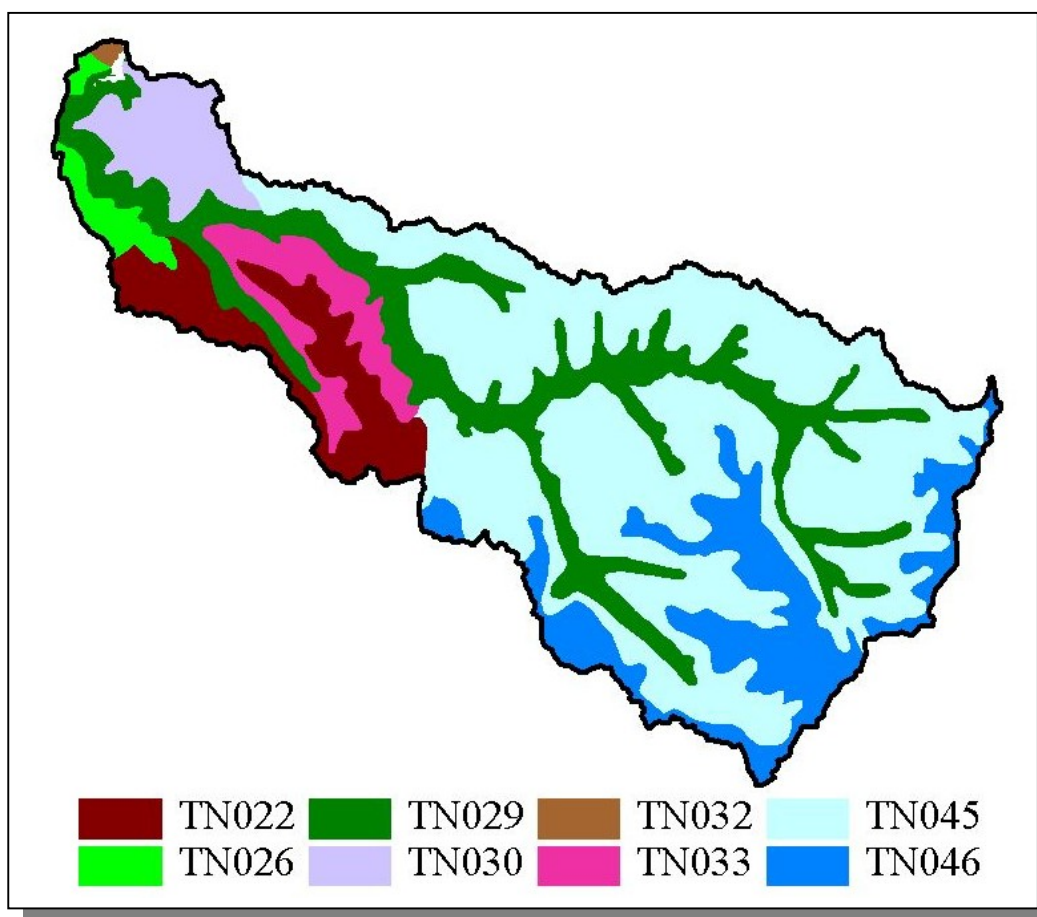


Figure 4-52. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000105.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN022	5.00	C	1.98	5.07	Loam	0.37
TN026	0.00	B	1.52	5.13	Silty Loam	0.40
TN029	8.00	C	2.96	5.40	Loam	0.33
TN030	2.00	B	1.84	5.06	Loam	0.33
TN032	19.00	C	1.21	5.51	Silty Loam	0.37
TN033	0.00	B	2.29	5.32	Loam	0.32
TN045	0.00	B	1.95	5.45	Loam	0.35
TN046	0.00	B	1.98	5.09	Silty Loam	0.38

Table 4-31. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000105. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Hardin	22,633	24,816	25,578	13.19	2,984	3,272	3,373	13.0
Wayne	13,935	16,498	16,842	20.22	2,817	3,335	3,405	20.9
Totals	36,568	41,314	42,420		5,801	6,607	6,778	16.8

Table 4-32. Population Estimates in Subwatershed 0604000105.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Collinwood	Wayne	1,014	440	31	407	2

Table 4-33. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000105.

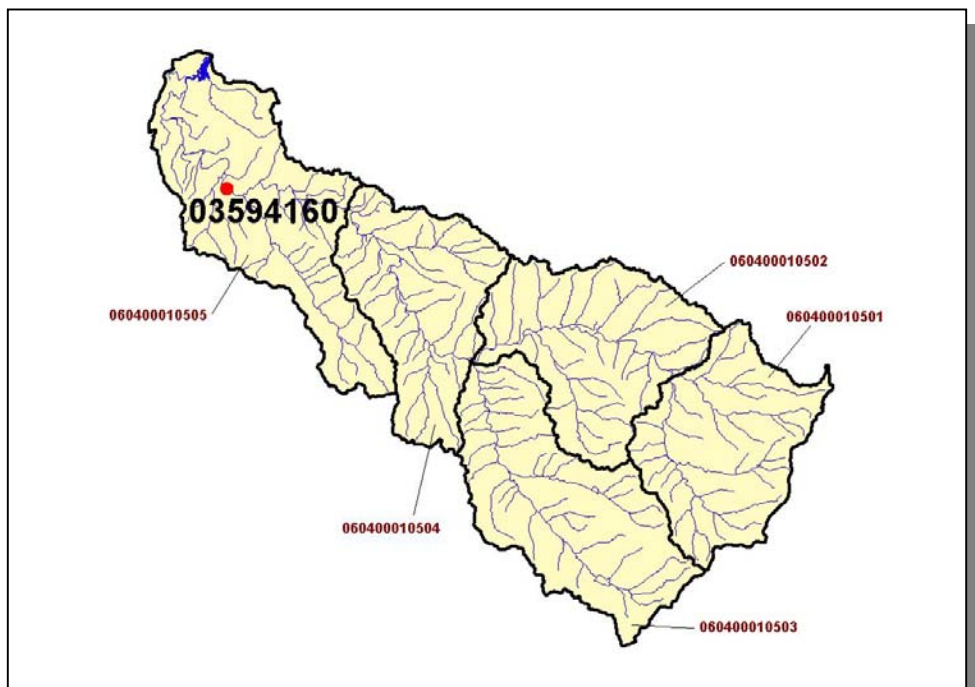


Figure 4-53. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000105. Subwatershed 060400010501, 060400010502, 060400010503, 060400010504 and 060400010505 boundaries are shown for reference. More information is provided in Appendix IV.

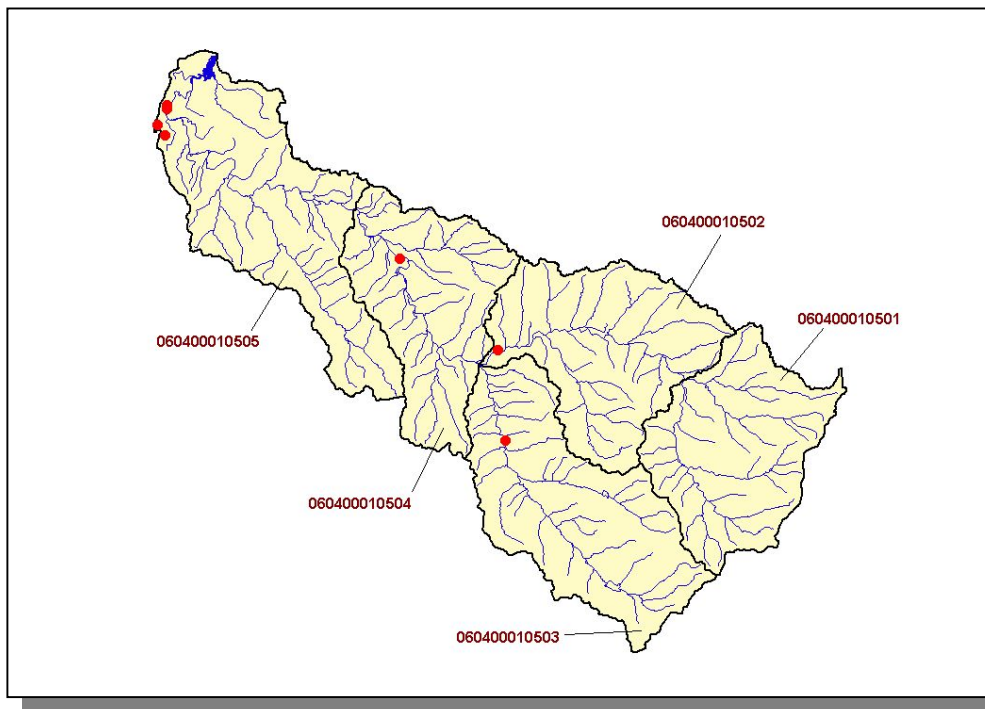


Figure 4-54. Location of STORET Monitoring Sites in Subwatershed 0604000105. Subwatershed 060400010501, 060400010502, 060400010503, 060400010504 and 060400010505 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.E.ii. Point Source Contributions.

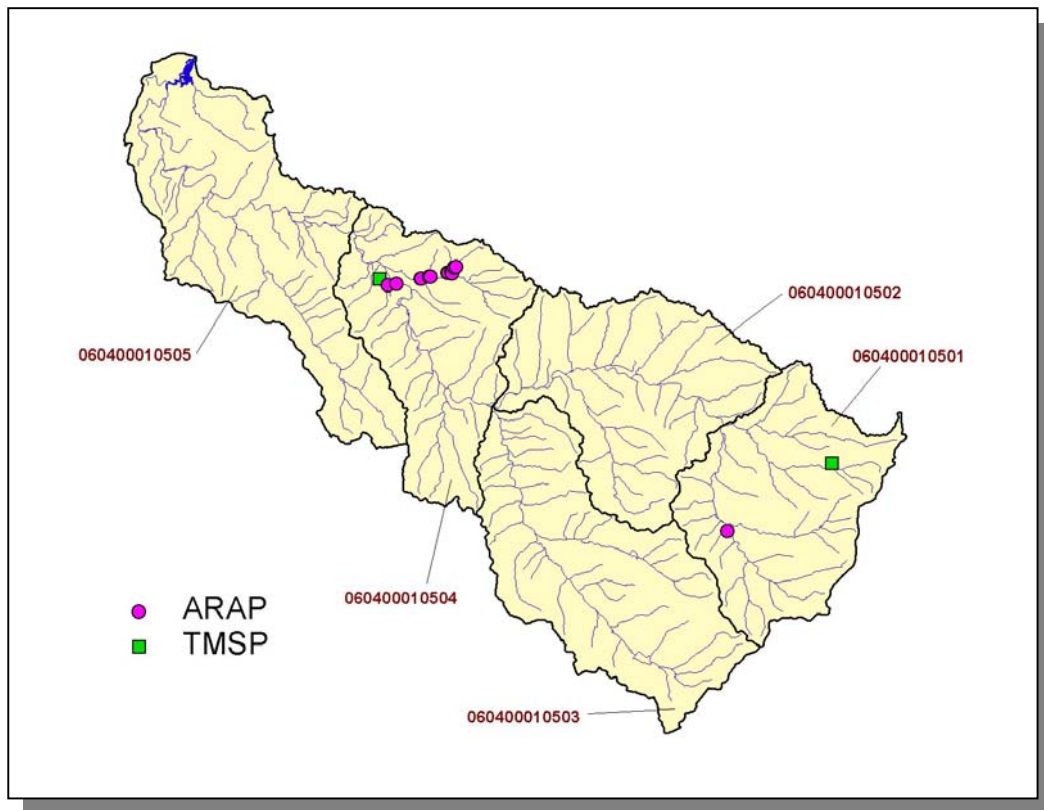


Figure 4-55. Location of Active Point Source Facilities in Subwatershed 0604000105. Subwatershed 0604000105, 0604000105, 0604000105, 0604000105, and 0604000105 boundaries are shown for reference. More information is provided in Appendix IV.

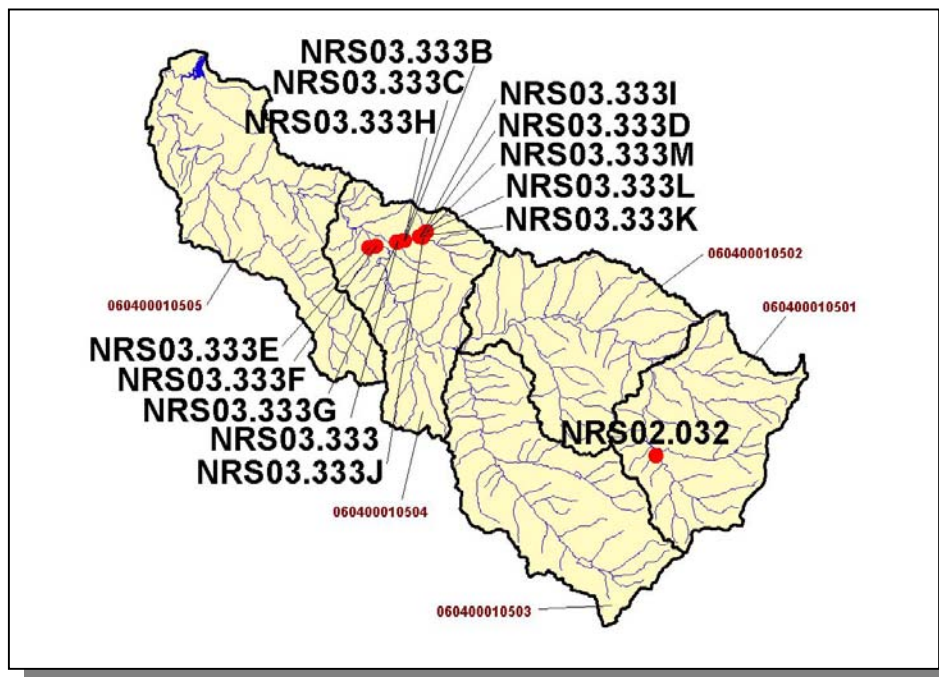


Figure 4-56. Location of ARAP Sites (Individual Permits) in Subwatershed 0604000105. Subwatershed 0604000105, 0604000105, 0604000105, 0604000105, and 0604000105 boundaries are shown for reference. More information is provided in Appendix IV.

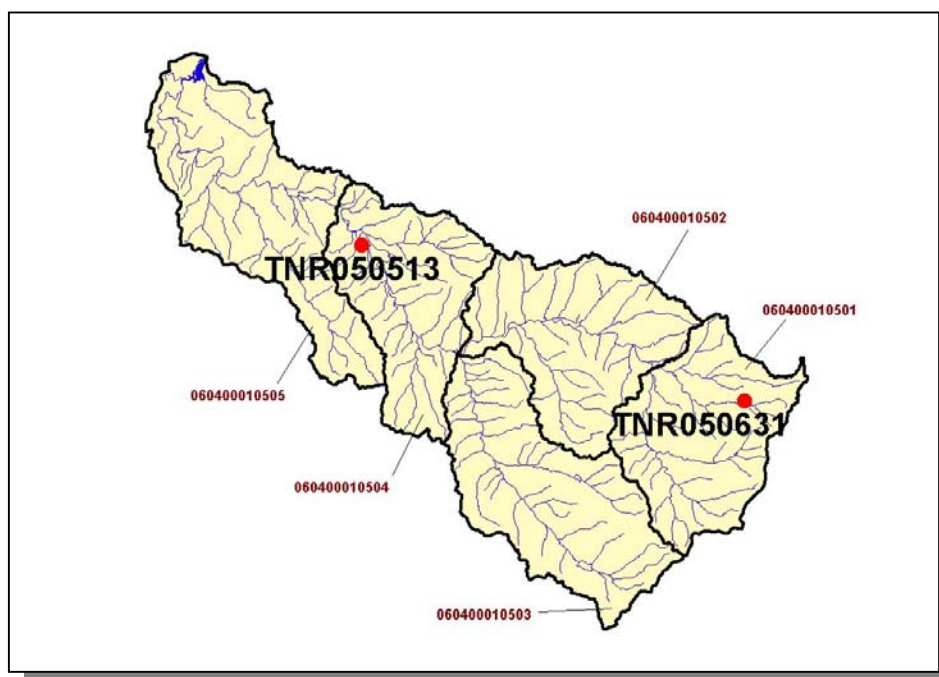


Figure 4-57. Location of TMSP Facilities in Subwatershed 0604000105. Subwatershed 0604000105, 0604000105, 0604000105, 0604000105, and 0604000105 boundaries are shown for reference. More information is provided in Appendix IV.

4.2.E.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Milk Cow	Cattle	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
3,120	<5	5,664	6	9	784	32

Table 4-34. Summary of Livestock Count Estimates in Subwatershed 0604000105. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hardin	219.9	219.9	6.5	27.6
Wayne	372.6	372.6	14.1	41.1
Totals	592.5	592.5	20.6	68.7

Table 4-35. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 0604000105.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.19
Grass (Hayland)	0.23
Legumes, Grass (Hayland)	0.46
Grass, Forbs, Legumes (Mixed Pasture)	0.60
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	6.56
Cotton (Row Crops)	2.63
Soybeans (Row Crops)	13.10
Wheat (Close-Grown Cropland)	3.93
All Other Close-Grown Cropland	5.50
Other Cropland not Planted	9.54
Conservation Reserve Program Lands	0.35
Non-Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.69

Table 4-36. Annual Estimated Soil Loss in Subwatershed 0604000105.

4.2.F. 0604000106 (Hardin Creek).

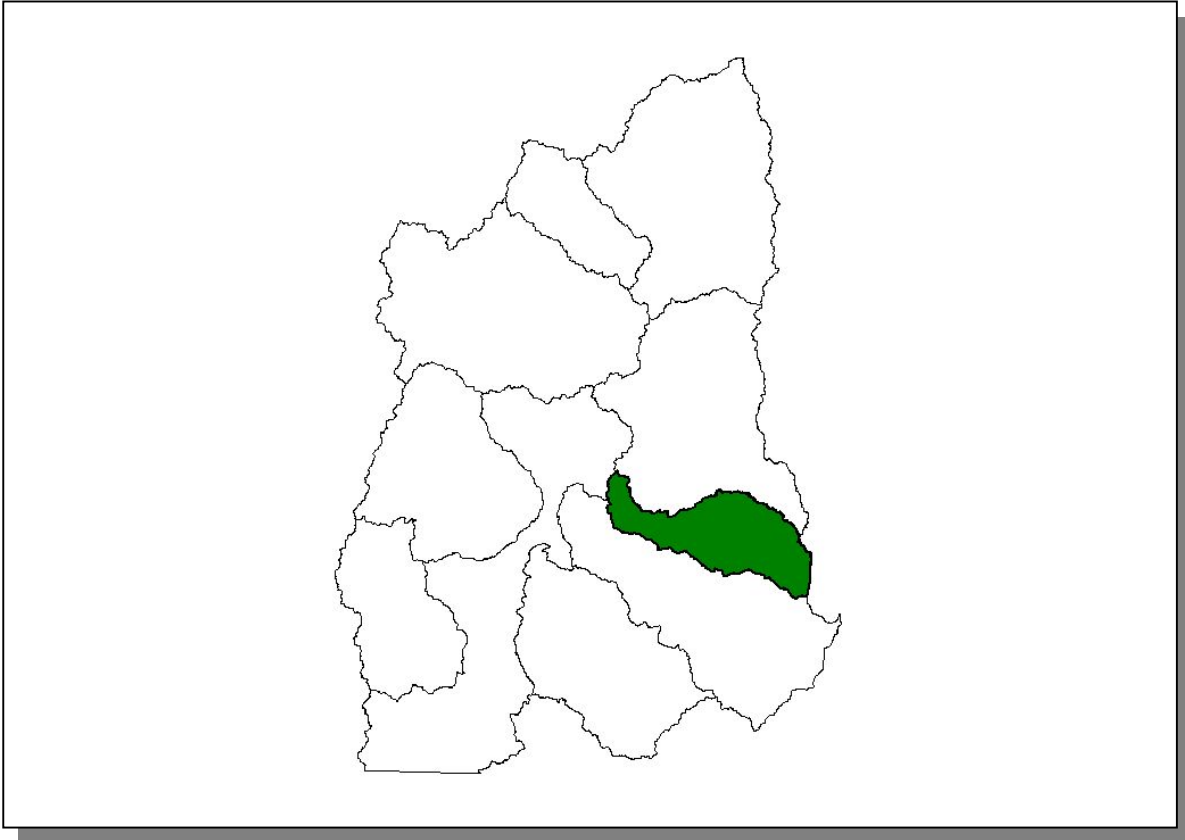


Figure 4-58. Location of Subwatershed 0604000106. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.F.i. General Description.

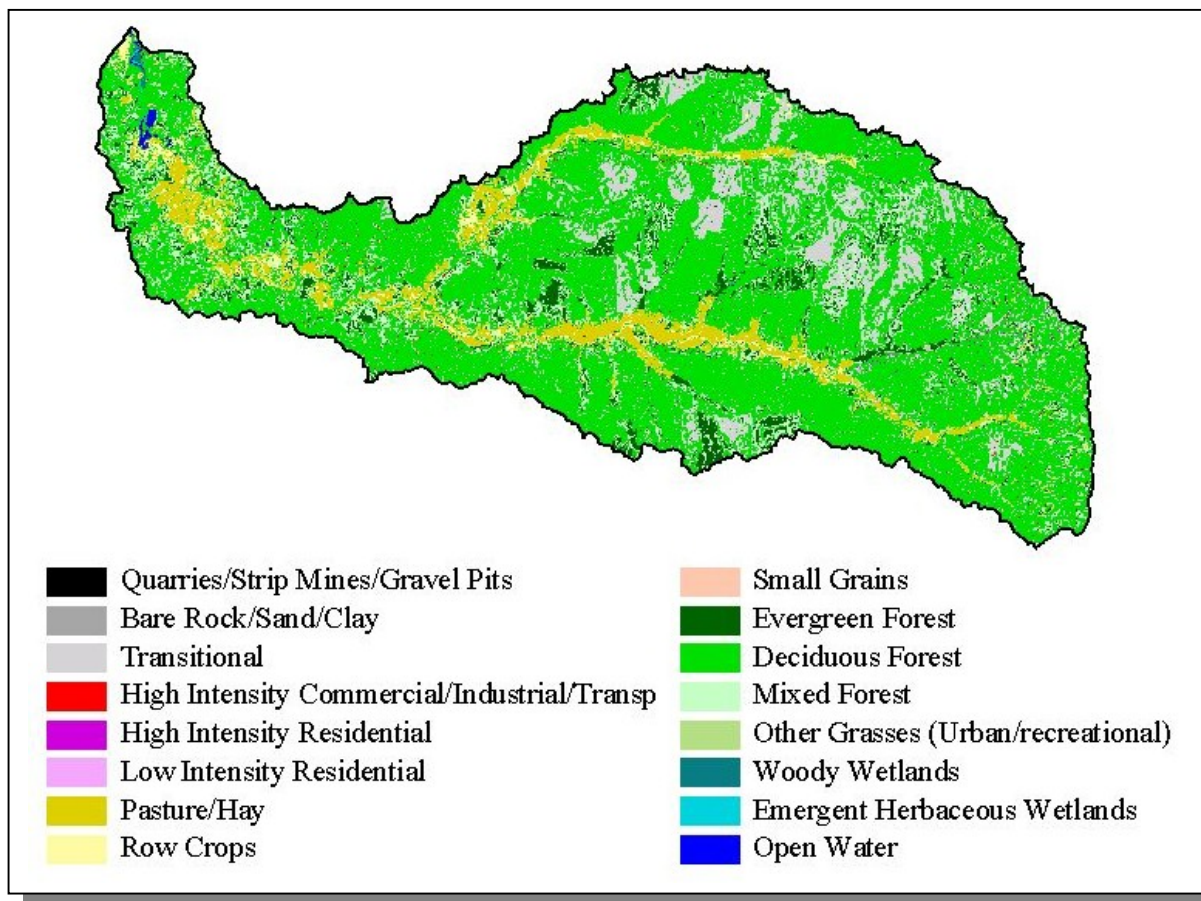


Figure 4-59. Illustration of Land Use Distribution in Subwatershed 0604000106.

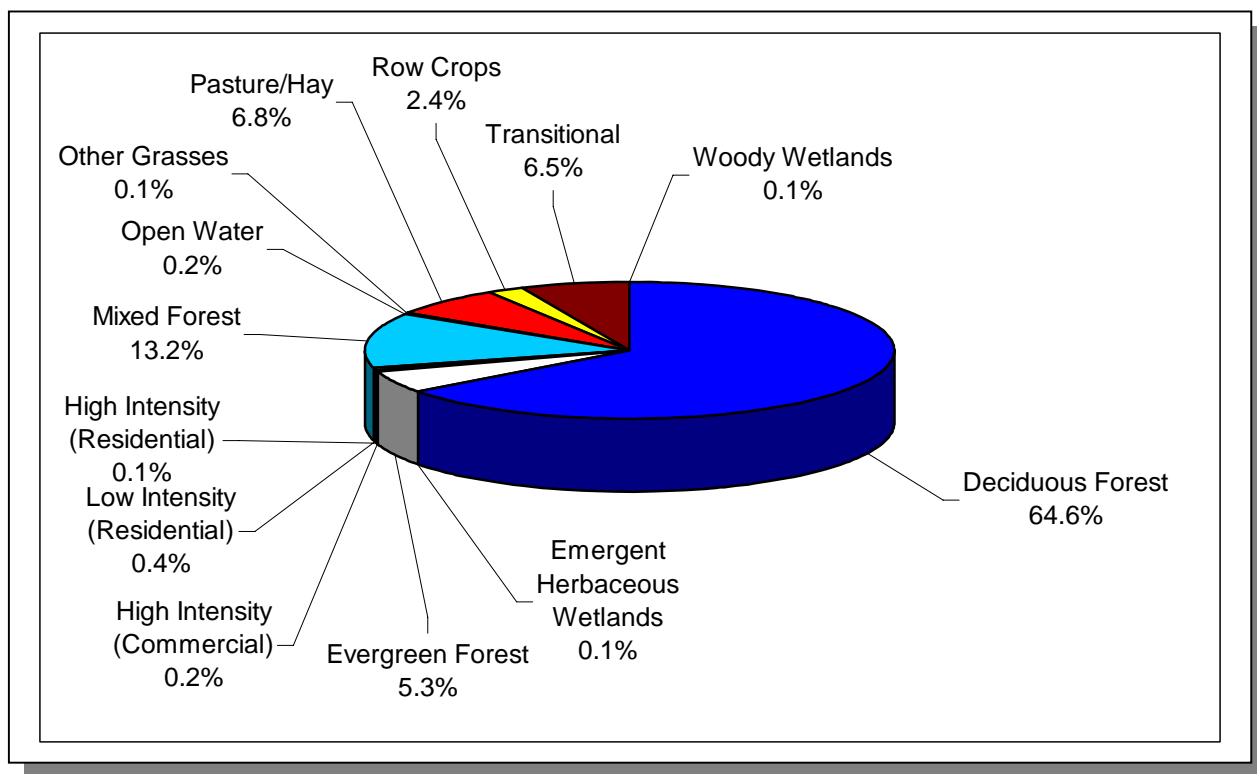


Figure 4-60. Land Use Distribution in Subwatershed 0604000106. More information is provided in Appendix IV.

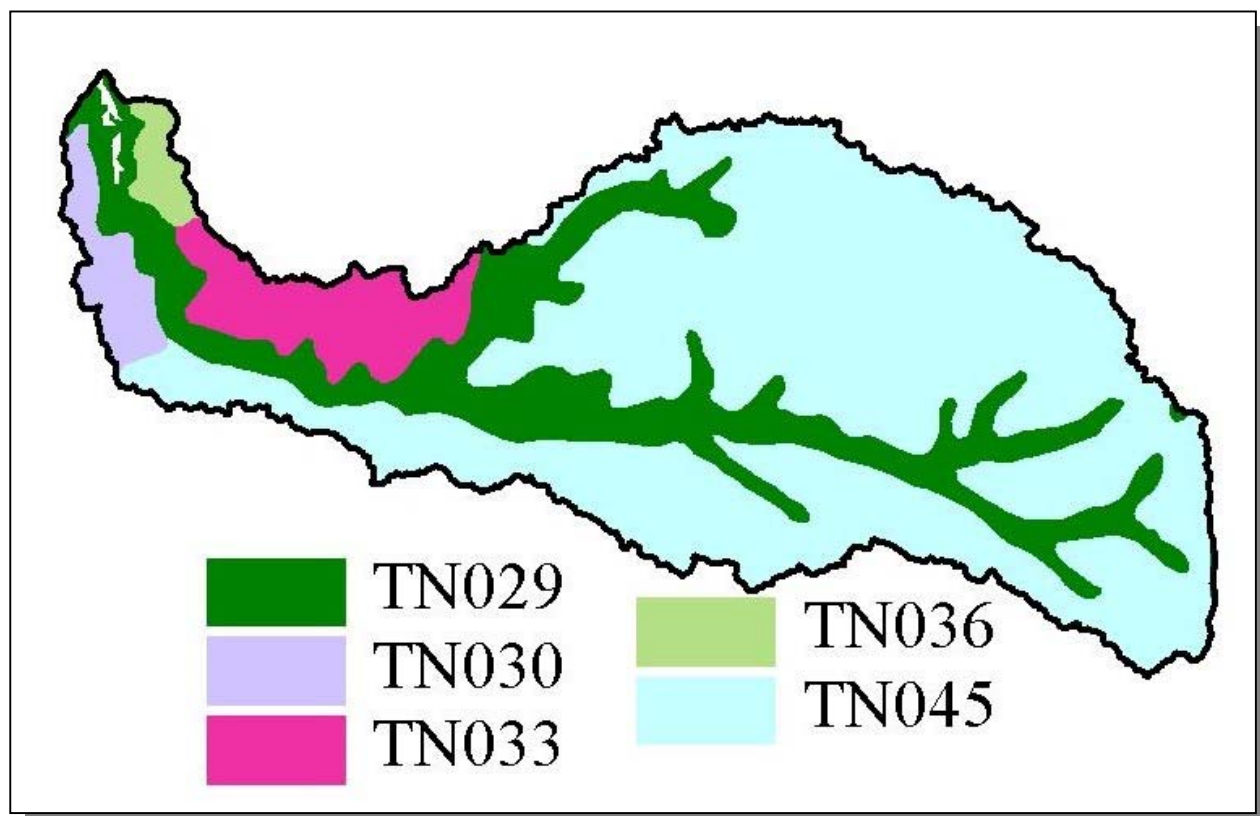


Figure 4-61. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000106.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN029	8.00	C	2.96	5.40	Loam	0.33
TN030	2.00	B	1.84	5.06	Loam	0.33
TN033	0.00	B	2.29	5.32	Loam	0.32
TN036	0.00	C	1.30	5.04	Silty Loam	0.36
TN045	0.00	B	1.95	5.45	Loam	0.35

Table 4-37. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000106. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Hardin	22,633	24,816	25,578	3.10	701	769	792	13.0
Wayne	13,935	16,498	16,842	10.81	1,506	1,783	1,820	20.8
Totals	36,568	41,314	42,420		2,207	2,552	2,612	18.4

Table 4-38. Population Estimates in Subwatershed 0604000106.

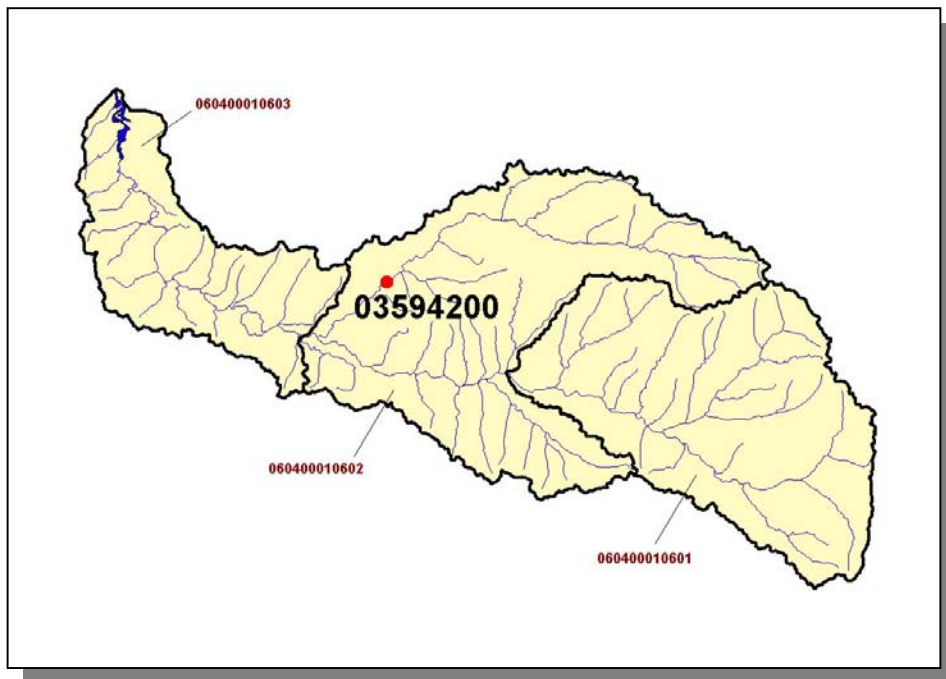


Figure 4-62. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000106. Subwatershed 060400010601, 060400010602, and 060400010603 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

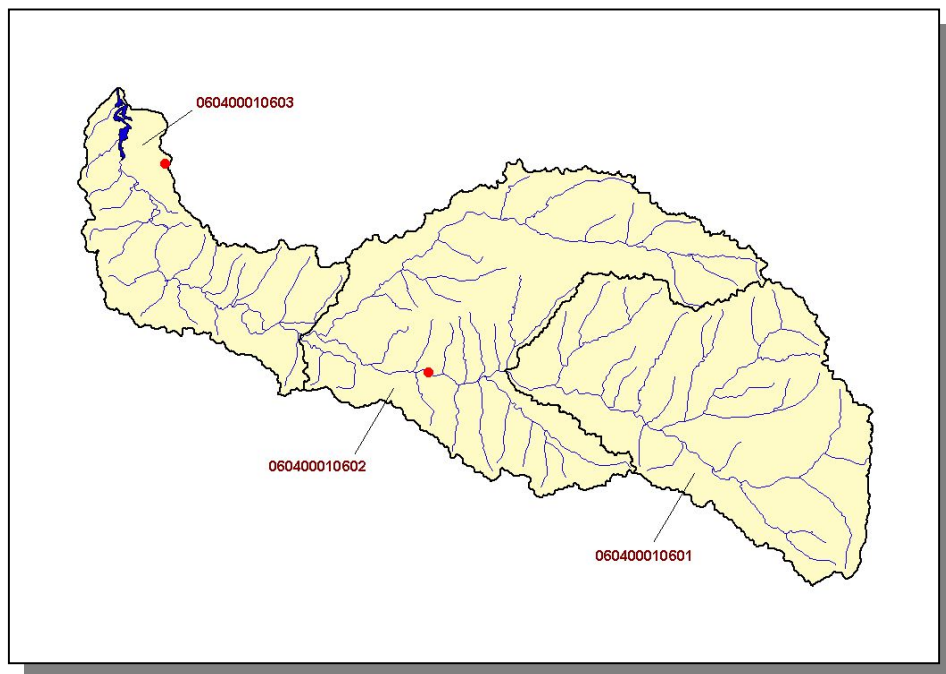


Figure 4-63. Location of STORET Monitoring Sites in Subwatershed 0604000106. Subwatershed 060400010601, 060400010602, and 060400010603 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.F.ii. Point Source Contributions.

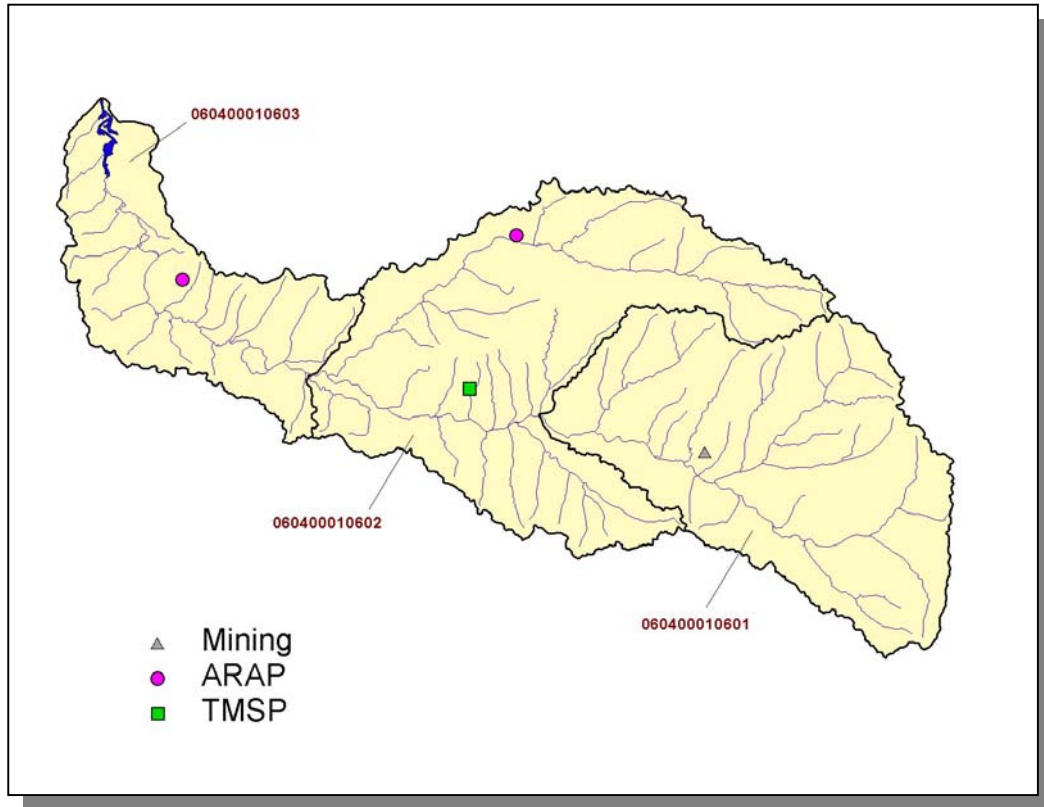


Figure 4-64. Location of Active Point Source Facilities in Subwatershed 0604000106. Subwatershed 060400010601, 060400010602, and 060400010603 boundaries are shown for reference. More information is provided in Appendix IV.



Figure 4-65. Location of Active Mining Facilities in Subwatershed 0604000106. Subwatershed 060400010601, 060400010602, and 060400010603 boundaries are shown for reference. More information is provided in Appendix IV.

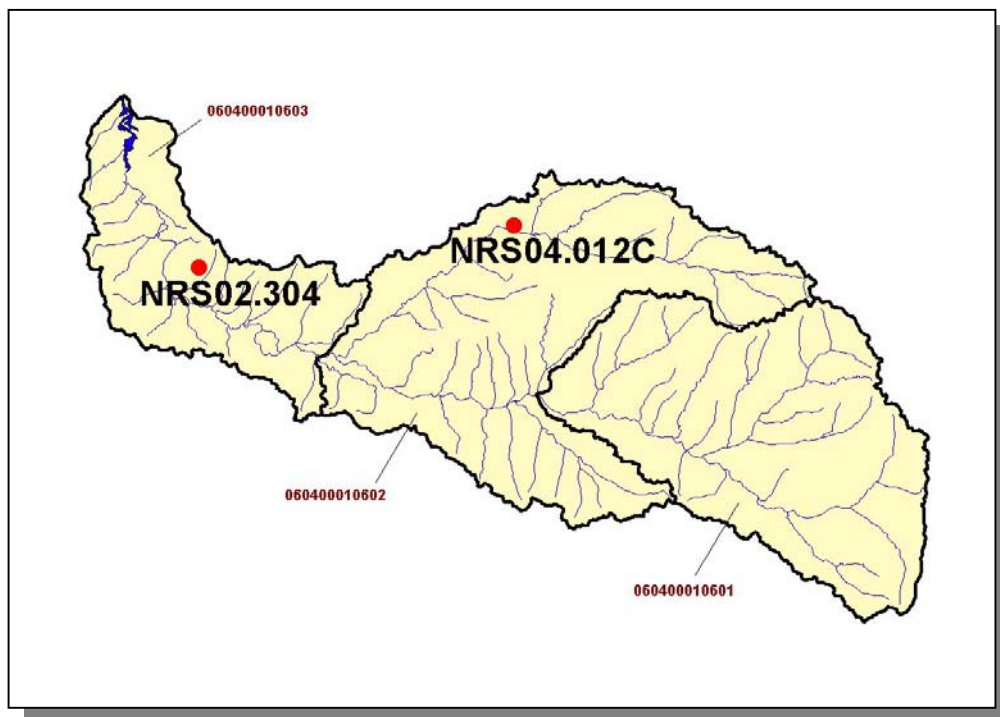


Figure 4-66. Location of ARAP Sites (Individual Permits) in Subwatershed 0604000106. Subwatershed 060400010601, 060400010602, and 060400010603 boundaries are shown for reference. More information is provided in Appendix IV.

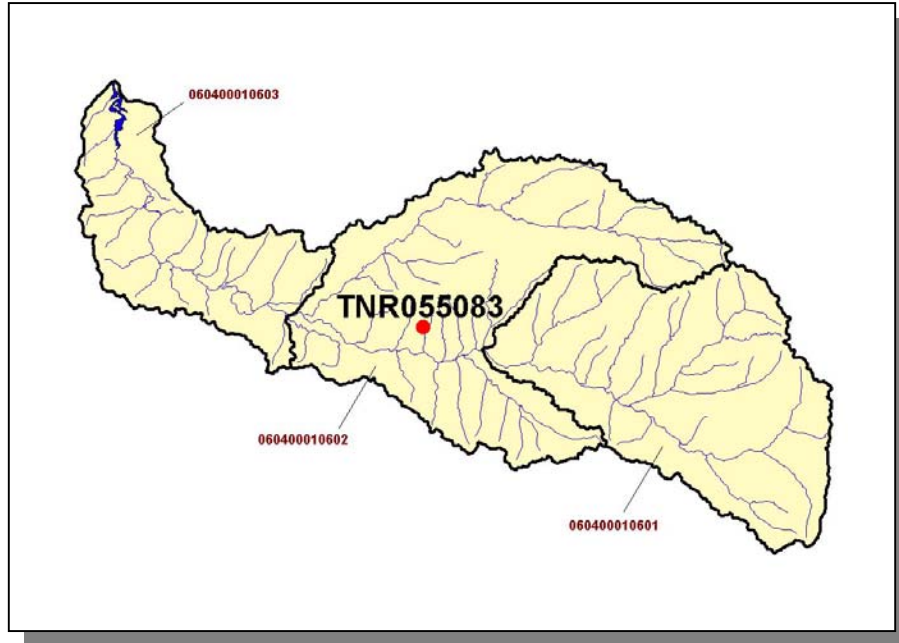


Figure 4-67. Location of TMSF Facilities in Subwatershed 0604000106. Subwatershed 060400010601, 060400010602, and 060400010603 boundaries are shown for reference. More information is provided in Appendix IV.

4.2.F.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Milk Cow	Cattle	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
1,230	<5	2,225	<5	<5	290	12

Table 4-39. Summary of Livestock Count Estimates in Subwatershed 0604000106. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hardin	219.9	219.9	6.5	27.6
Wayne	372.6	372.6	14.1	41.1
Total	592.5	592.5	20.6	68.7

Table 4-40. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0604000106.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.20
Grass (Hayland)	0.22
Legumes, Grass (Hayland)	0.46
Grass, Forbs, Legumes (Mixed Pasture)	0.65
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	7.19
Cotton (Row Crops)	2.63
Soybeans (Row Crops)	13.10
Wheat (Close-Grown Cropland)	3.93
All Other Close-Grown Cropland	5.50
Other Cropland not Planted	9.54
Conservation Reserve Program Lands	0.35
Non-Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.77

Table 4-41. Annual Estimated Total Soil Loss in Subwatershed 0604000106.

4.2.G. 0604000107 (Tennessee River).

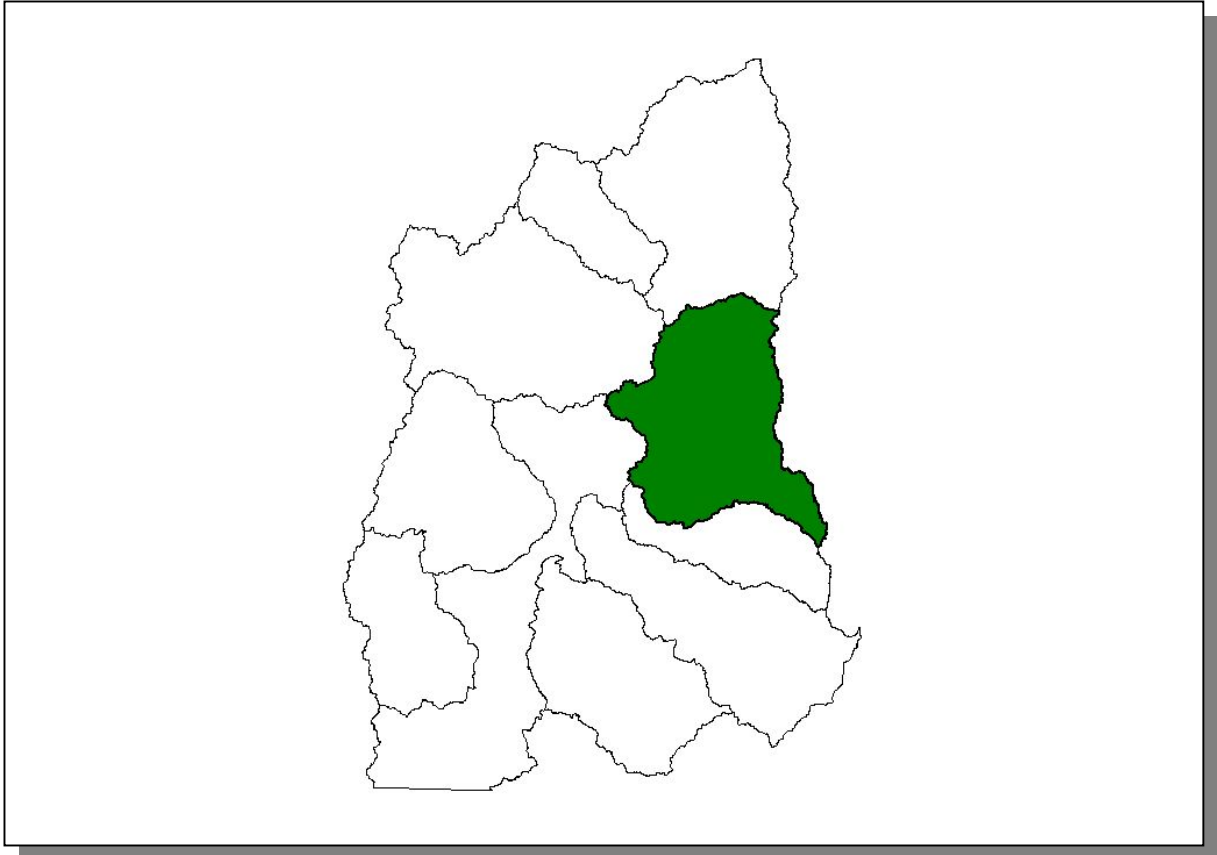


Figure 4-68. Location of Subwatershed 0604000107. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.G.i. General Description.

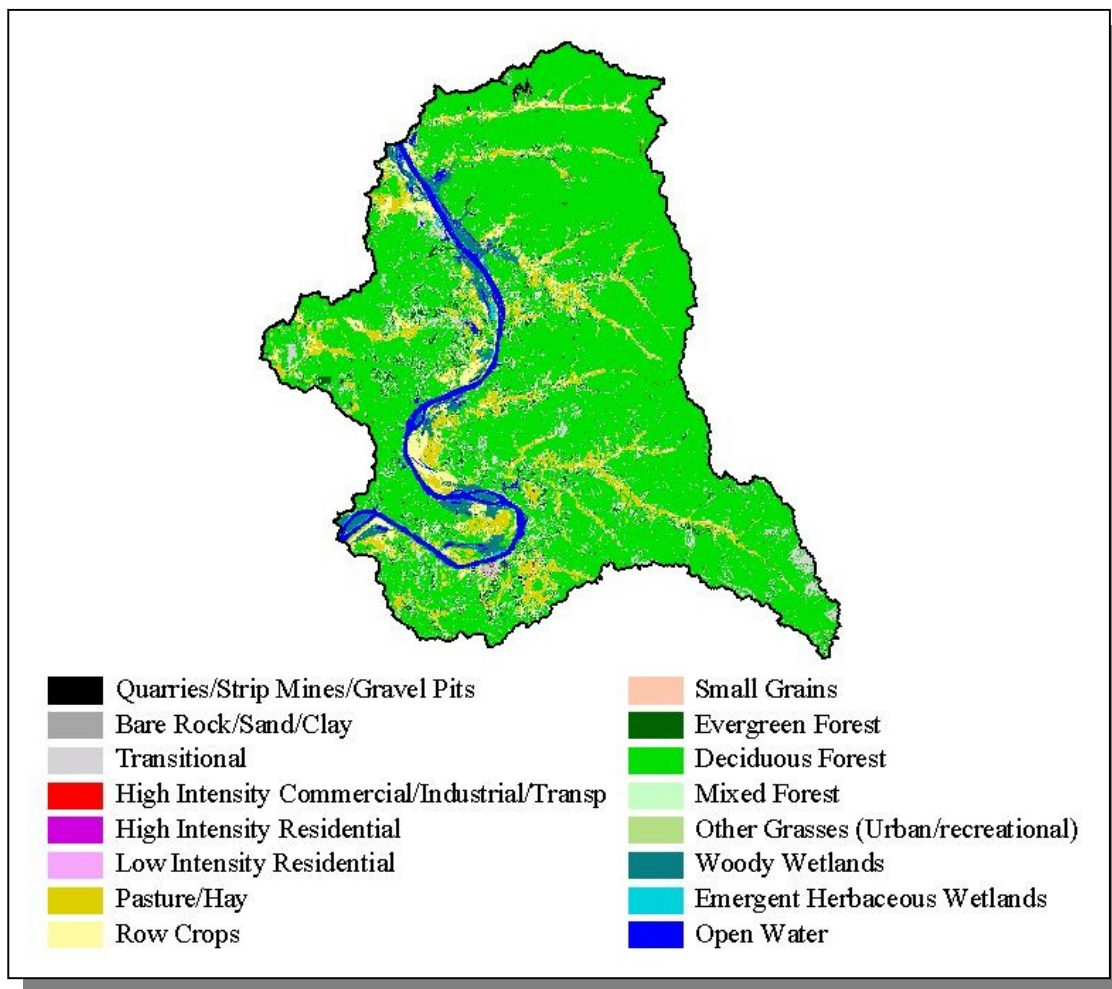


Figure 4-69. Illustration of Land Use Distribution in Subwatershed 0604000107.

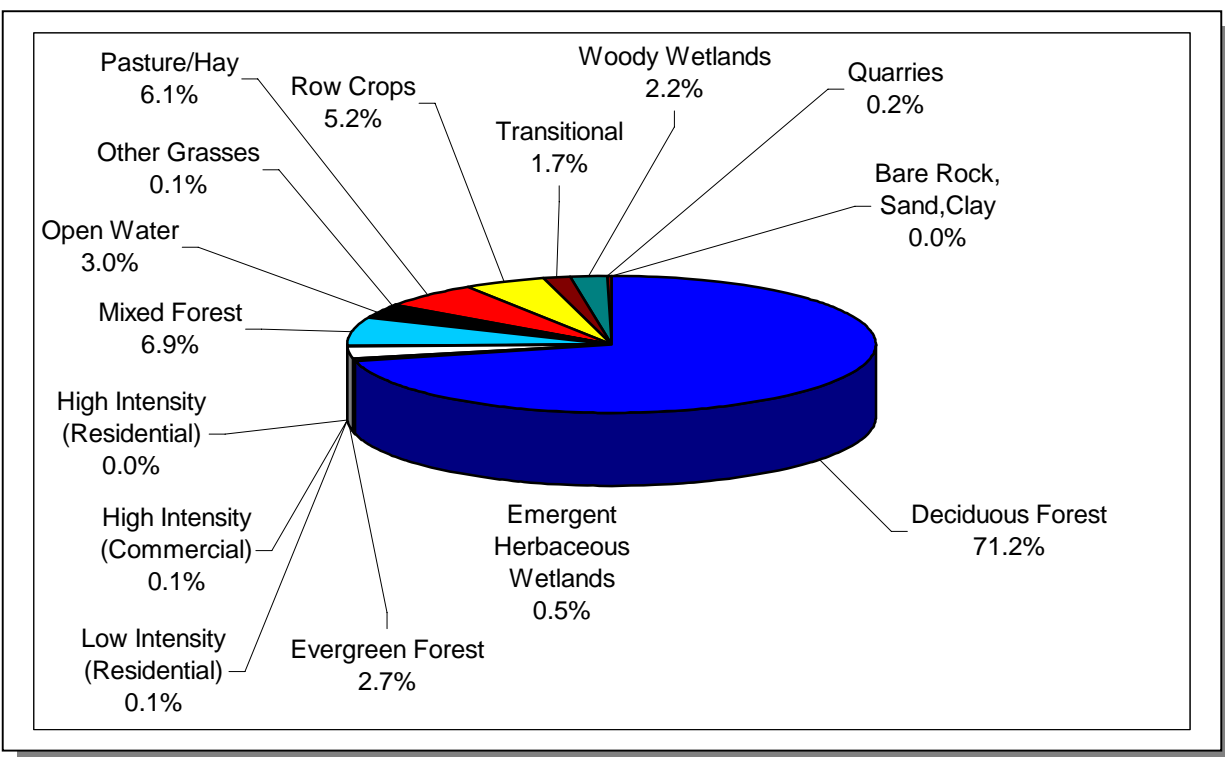


Figure 4-70. Land Use Distribution in Subwatershed 0604000107. More information is provided in Appendix IV.

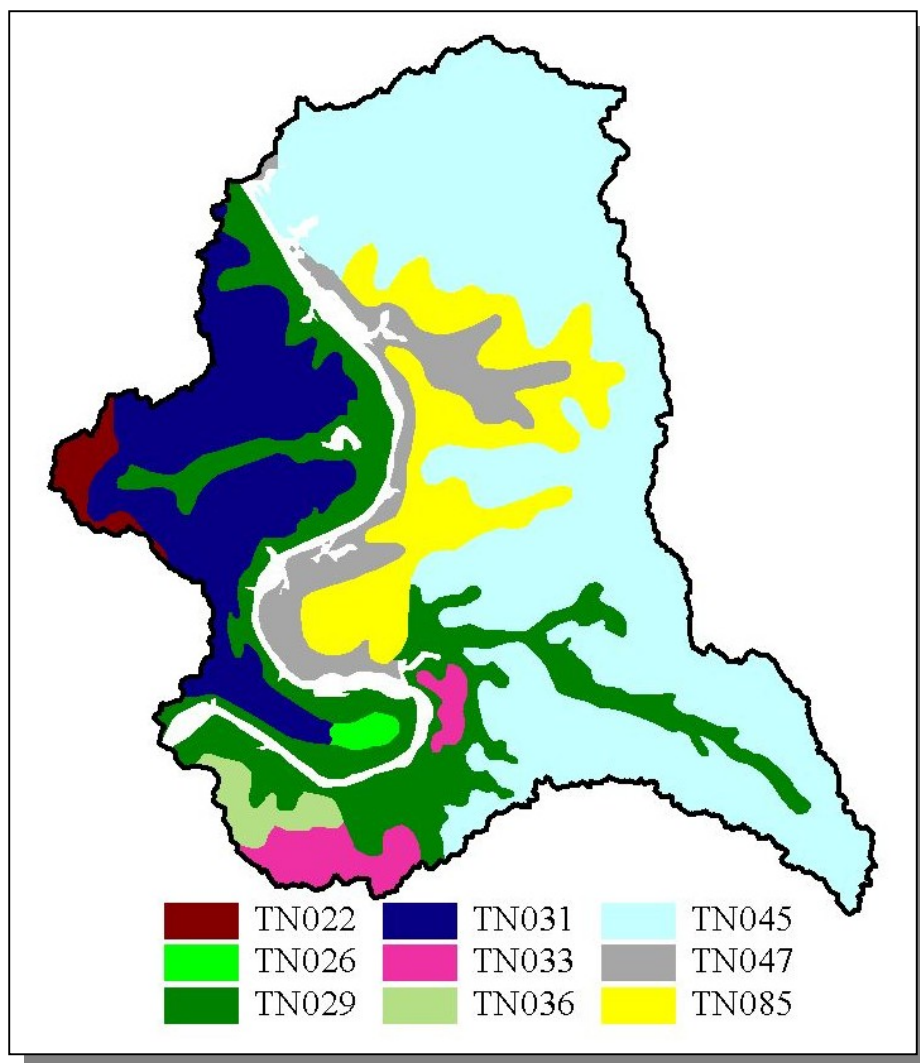


Figure 4-71. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000107.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGI C GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN022	5.00	C	1.98	5.07	Loam	0.37
TN026	0.00	B	1.52	5.13	Silty Loam	0.40
TN029	8.00	C	2.96	5.40	Loam	0.33
TN031	0.00	C	3.27	4.88	Loam	0.33
TN033	0.00	B	2.29	5.32	Loam	0.32
TN036	0.00	C	1.30	5.04	Silty Loam	0.36
TN045	0.00	B	1.95	5.45	Loam	0.35
TN047	21.00	C	1.62	5.73	Silty Loam	0.37
TN085	0.00	C	1.60	4.89	Clayey Loam	0.30

Table 4-42. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000107. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Decatur	10,472	10,799	11,731	18.24	191	197	2,140	12.0
Hardin	22,633	24,816	25,578	1.93	437	480	494	13.0
Perry	6,612	7,438	7,631	22.75	1,505	1,693	1,736	15.3
Wayne	13,935	16,498	16,842	10.47	1,459	1,727	1,763	20.8
Totals	53,652	59,551	61,782		5,312	5,870	6,133	15.5

Table 4-43. Population Estimates in Subwatershed 0604000107.

NUMBER OF HOUSING UNITS						
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Clifton	Wayne	651	281	257	21	3

Table 4-44. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000107.

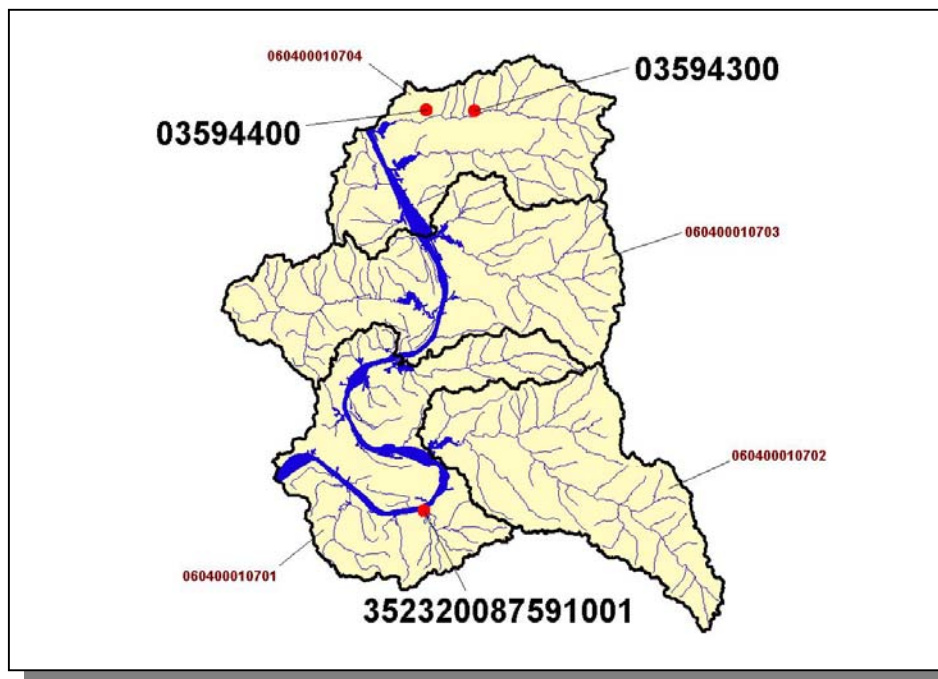


Figure 4-72. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000107. Subwatershed 060400010701, 060400010702, 060400010703, and 060400010704 boundaries are shown for reference. More information is provided in Appendix IV.

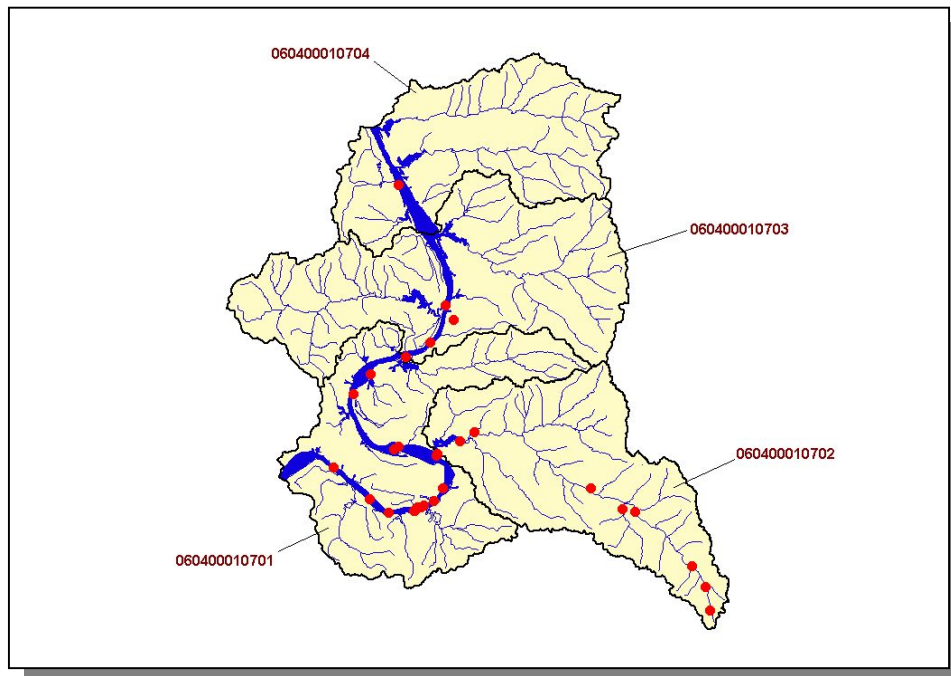


Figure 4-73. Location of STORET Monitoring Sites in Subwatershed 0604000107. Subwatershed 060400010701, 060400010702, 060400010703, and 060400010704 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.G.ii. Point Source Contributions.

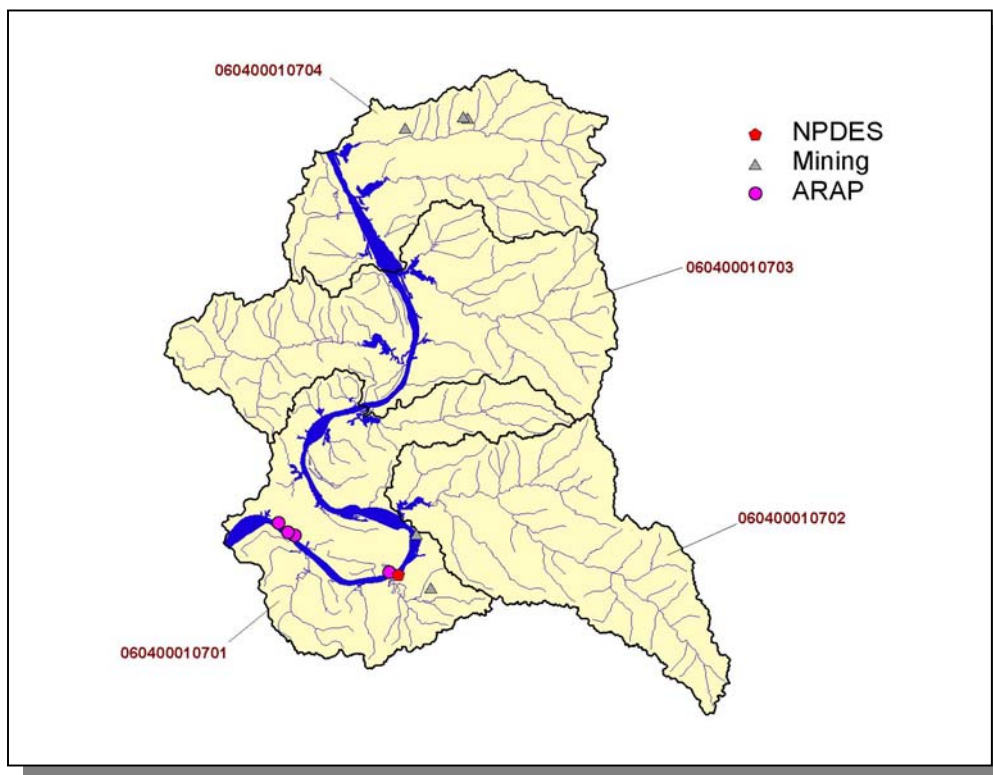


Figure 4-74. Location of Active Point Source Facilities in Subwatershed 0604000107. Subwatershed 060400010701, 060400010702, 060400010703, and 060400010704 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

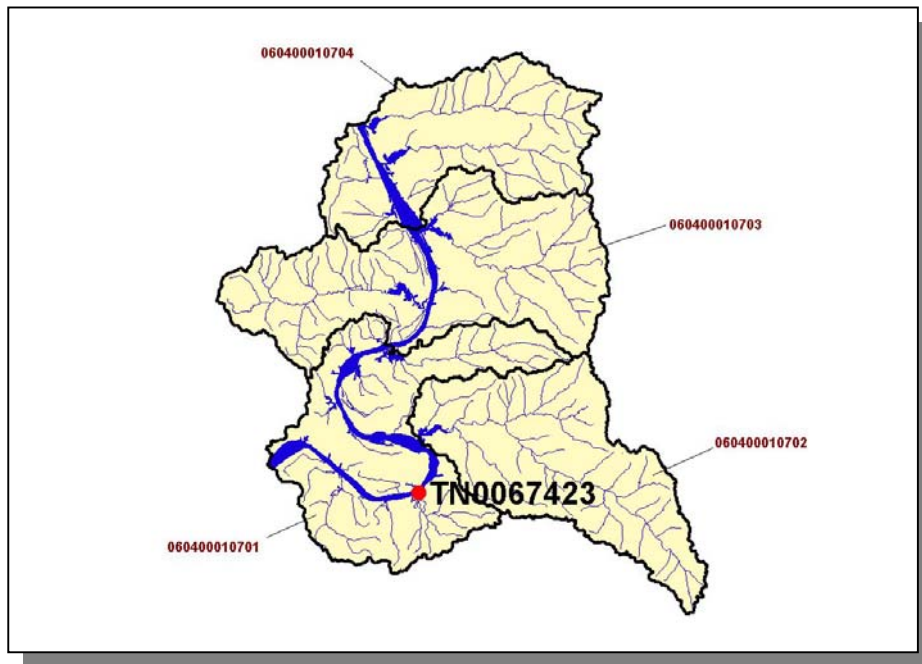


Figure 4-75. Location of NPDES Facilities in Subwatershed 0604000107. Subwatershed 060400010701, 060400010702, 060400010703, and 060400010704 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

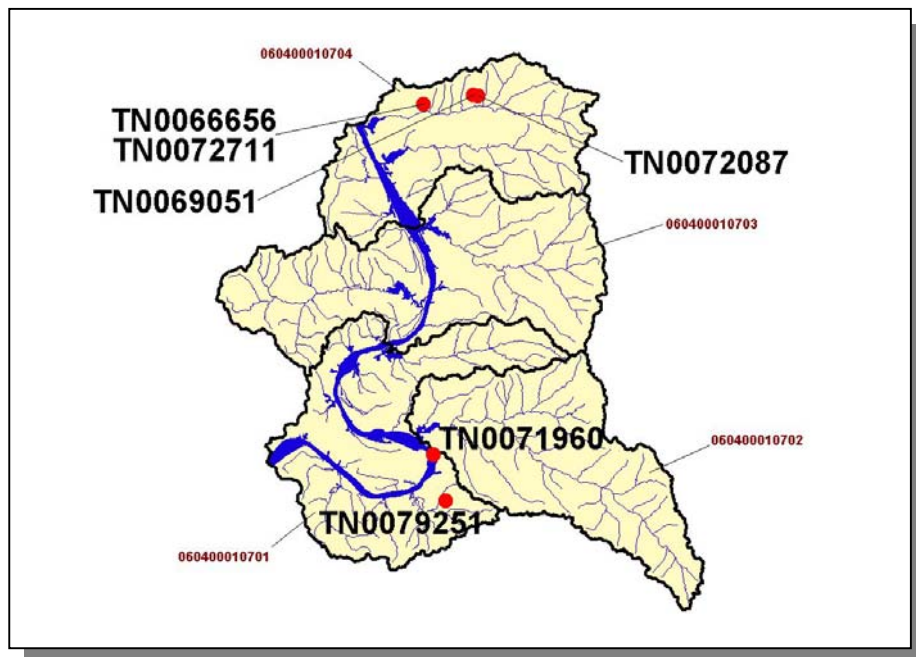


Figure 4-76. Location of Active Mining Facilities in Subwatershed 0604000107. Subwatershed 060400010701, 060400010702, 060400010703, and 060400010704 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

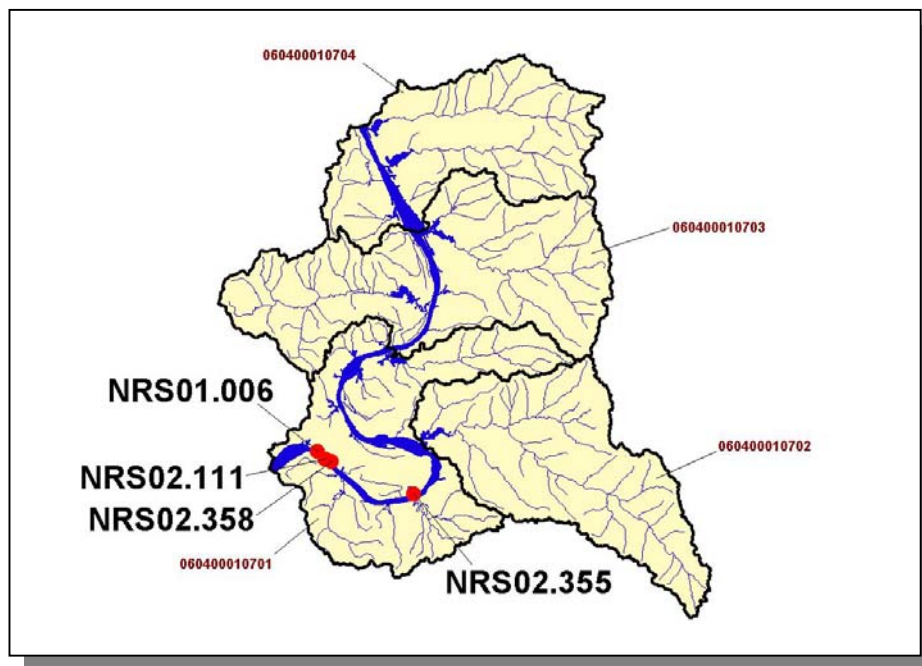


Figure 4-77. Location of ARAP Sites (Individual Permits) in Subwatershed 0604000107. Subwatershed 060400010701, 060400010702, 060400010703, and 060400010704 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.G.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
2,574	4,843	5	7	<5	804	23

Table 4-45. Summary of Livestock Count Estimates in Subwatershed 0604000107.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hardin	219.9	219.9	6.5	27.6
Perry	223.6	223.6	5.1	22.0
Wayne	372.6	372.6	14.1	41.1
Totals	816.1	816.1	25.7	90.7

Table 4-46. Forest Acreage and Average Removal Rates (1987-1994) in Subwatershed 0604000107.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	0.59
Grass (Hayland)	0.15
Legumes (Hayland)	0.45
Grass, Forbs, Legumes (Mixed Pasture)	0.47
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	4.36
Cotton (Row Crops)	2.63
Sorghum (Row Crops)	3.17
Soybeans (Row Crops)	7.40
Wheat (Close-Grown Cropland)	3.12
All Other Close-Grown Cropland	5.50
Other Cropland not Planted	5.49
Conservation Reserve Program Lands	0.19
Non-Agricultural Land Use	0.00
Other Land in Farms	0.89
Farmsteads and Ranch Headquarters	0.41

Table 4-47. Annual Estimated Total Soil Loss in Subwatershed 0604000107.

4.2.H. 0604000108 (Beech River).

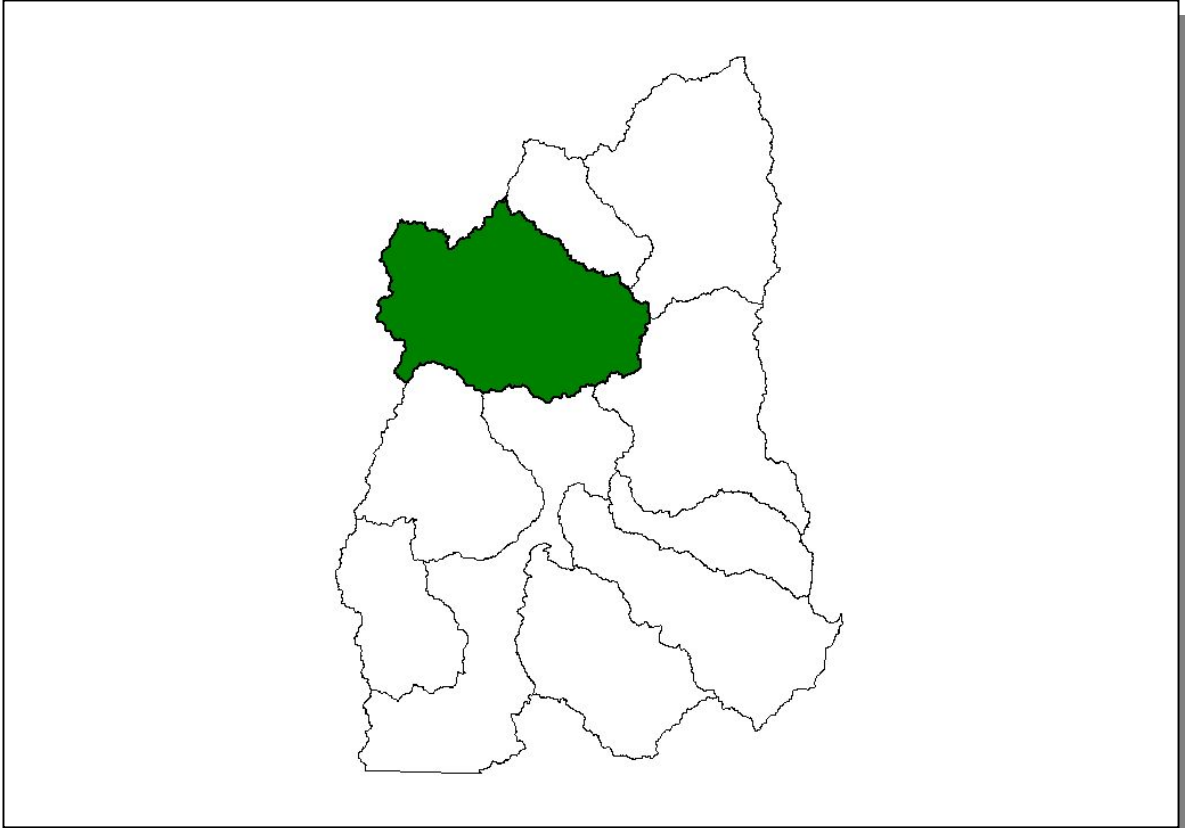


Figure 4-78. Location of Subwatershed 0604000108. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.H.i. General Description.

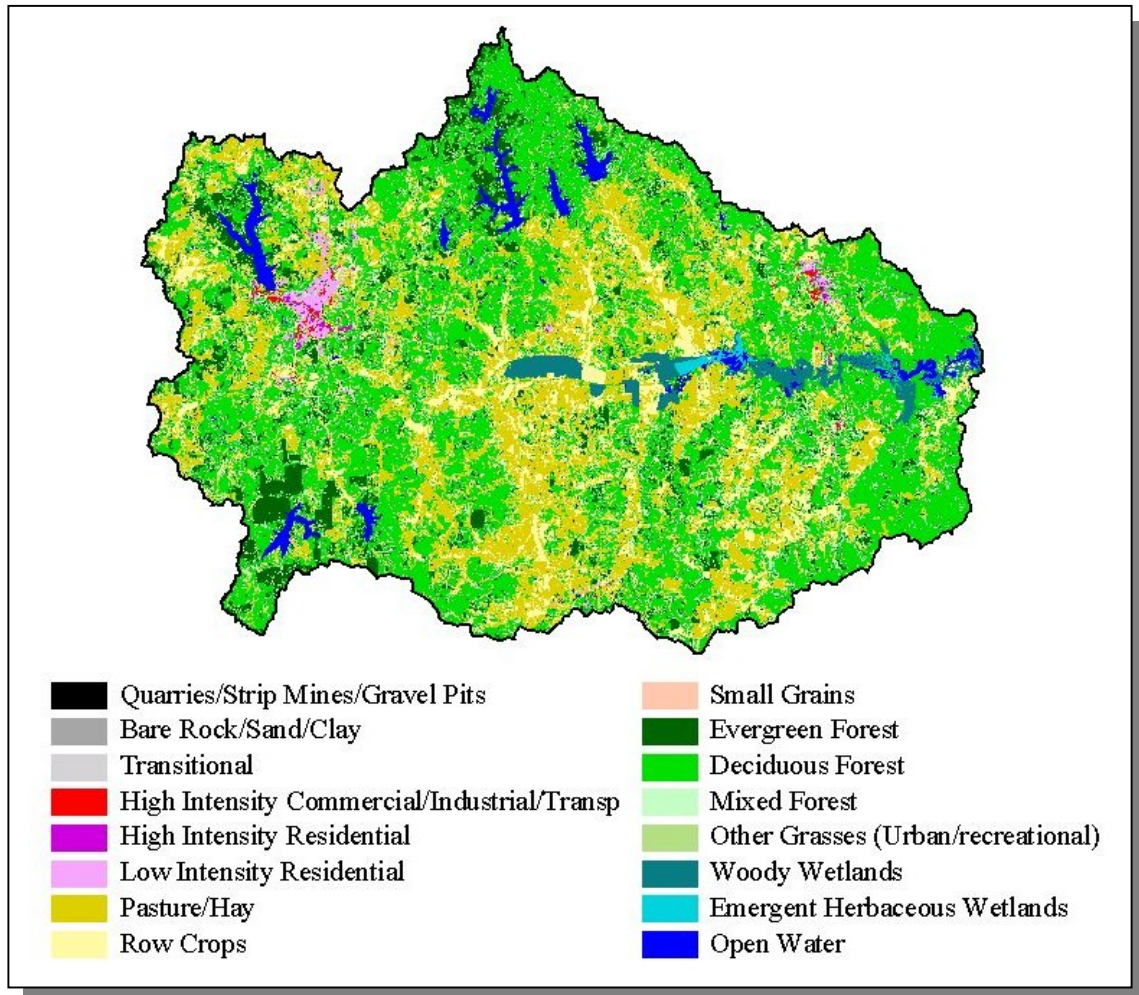


Figure 4-79. Illustration of Land Use Distribution in Subwatershed 0604000108.

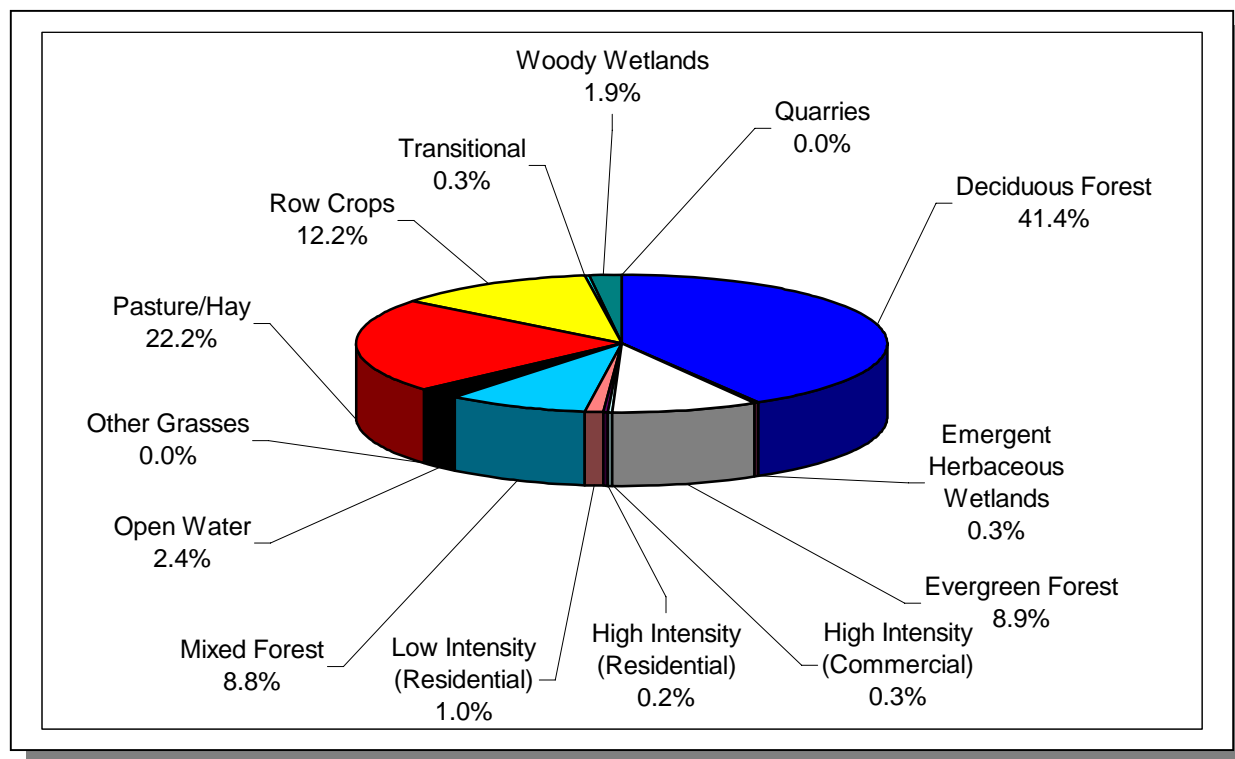


Figure 4-80. Land Use Distribution in Subwatershed 0604000108. More information is provided in Appendix IV.

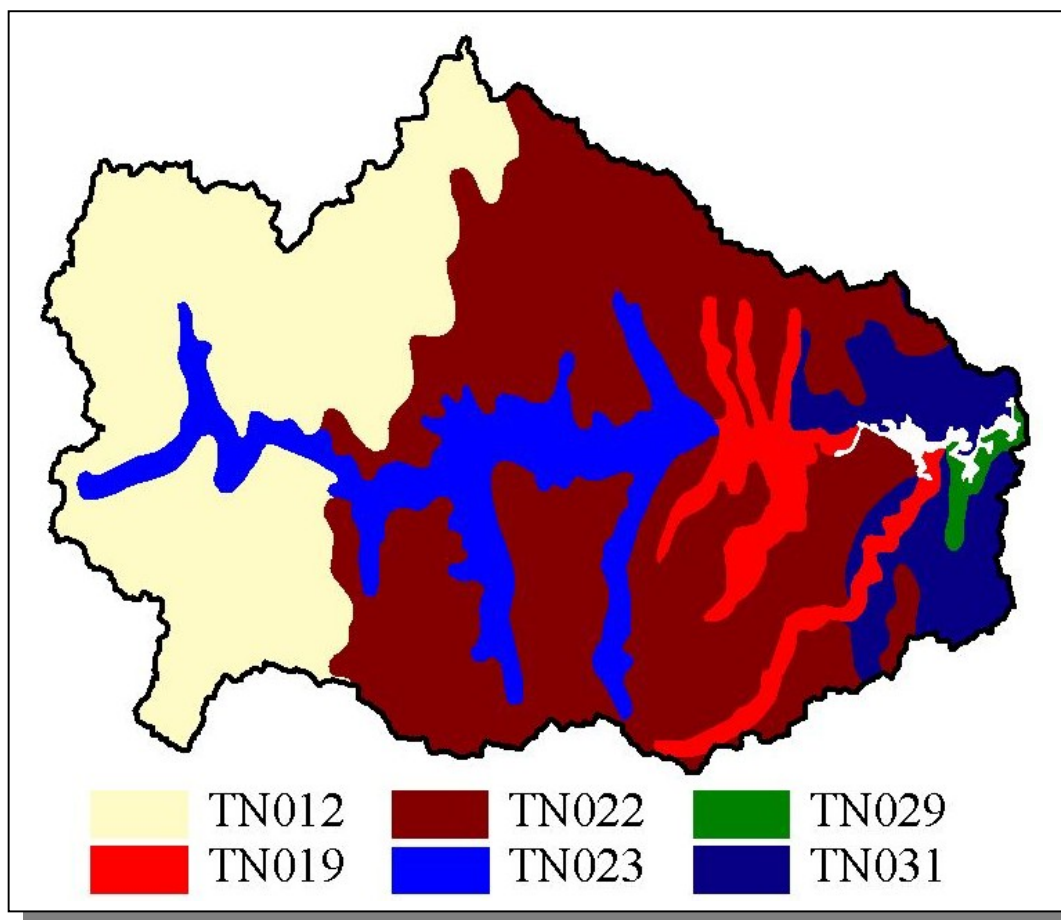


Figure 4-81. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000108.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN012	1.00	C	2.52	5.13	Silty Loam	0.39
TN019	62.00	C	1.54	4.76	Loam	0.26
TN022	5.00	C	1.98	5.07	Loam	0.37
TN023	17.00	C	1.35	5.12	Silty Loam	0.42
TN029	8.00	C	2.96	5.40	Loam	0.33
TN031	0.00	C	3.27	4.88	Loam	0.33

Table 4-48. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000108. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Decatur	10,472	10,799	11,731	26.01	2,724	2,809	3,051	12.0
Henderson	21,844	24,000	25,522	40.2	8,782	9,648	10,260	16.8
Totals	32,316	34,799	37,253		11,506	12,457	13,311	15.7

Table 4-49. Population Estimates in Subwatershed 0604000108.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Decaturville	Decatur	863	378	312	64	2
Lexington	Henderson	5,810	2,612	2,476	125	11
Parsons	Decatur	2,033	928	698	226	4
Scott's Hill	Henderson	611	297	12	278	7
Total		9,317	4,215	3,498	693	24

Table 4-50. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000108.

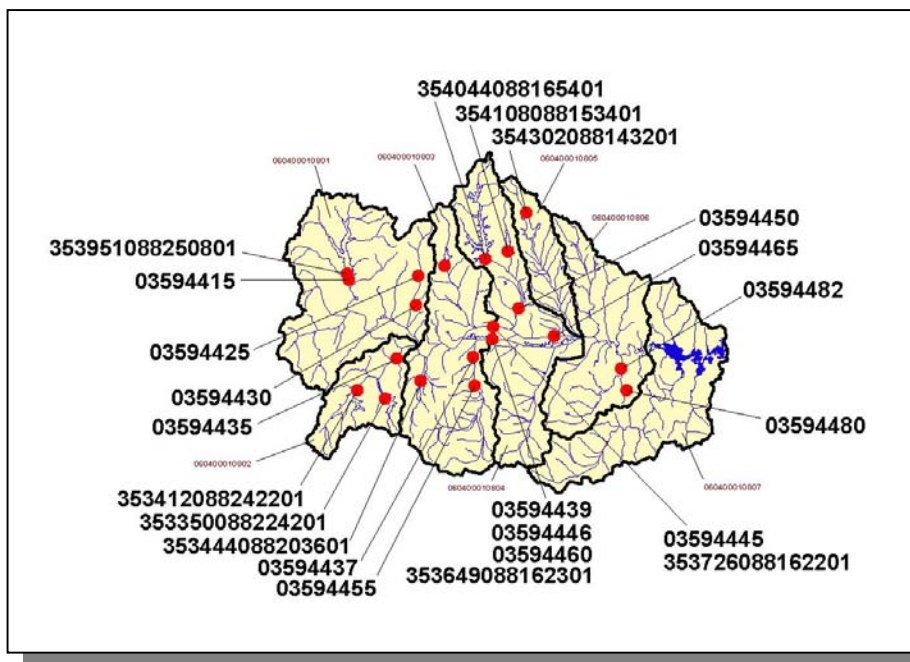


Figure 4-82. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000108. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806 and 060400010807 boundaries are shown for reference. More information is provided in Appendix IV.

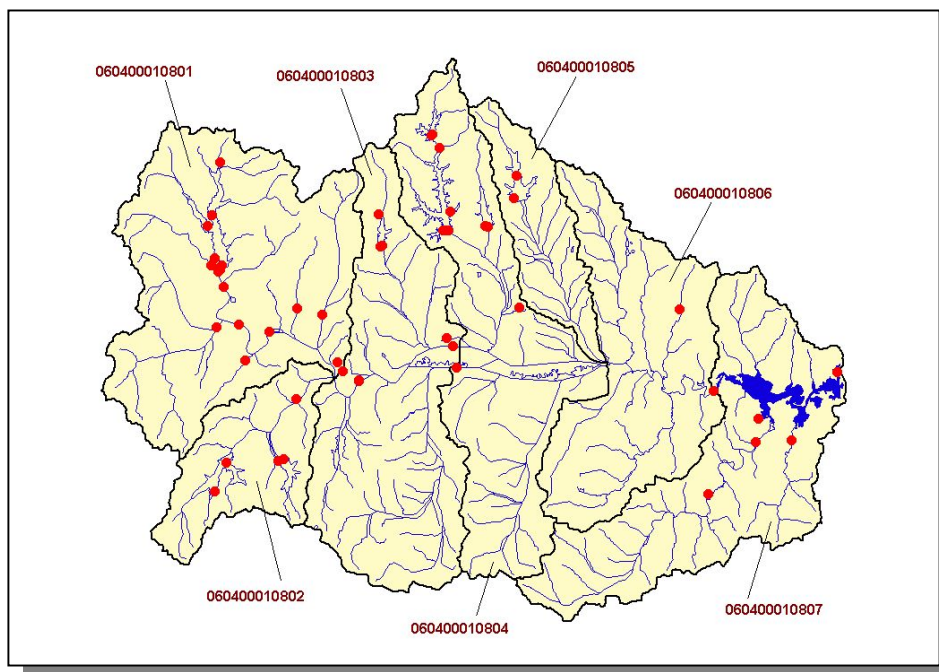


Figure 4-83. Location of STORET Monitoring Sites in Subwatershed 0604000108. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806 and 060400010807 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.H.ii. Point Source Contributions.

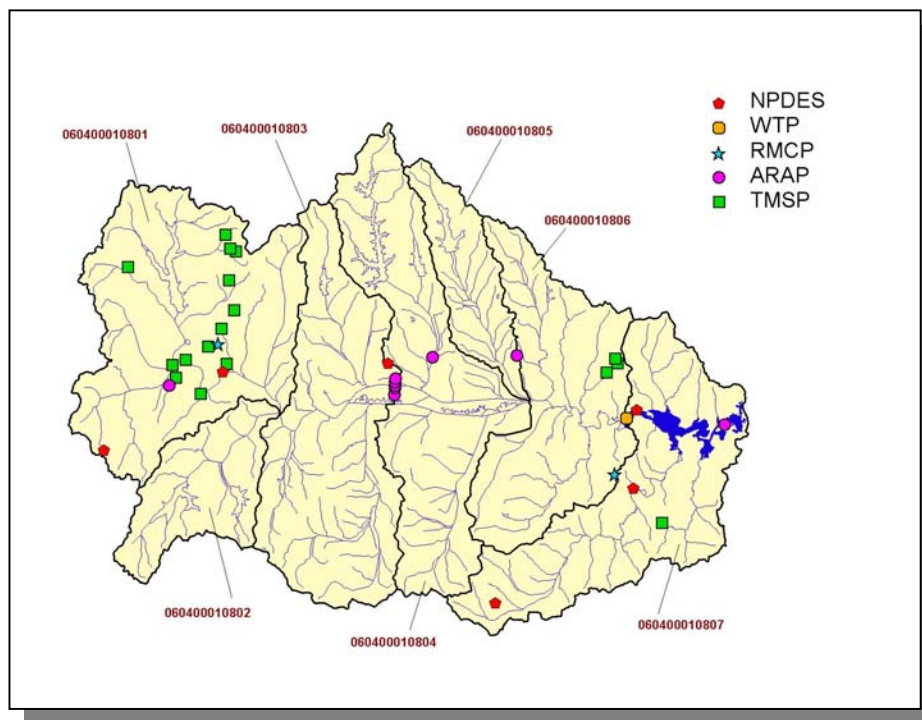


Figure 4-84. Location of Active Point Source Facilities in Subwatershed 0604000108. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806, and 060400010807 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

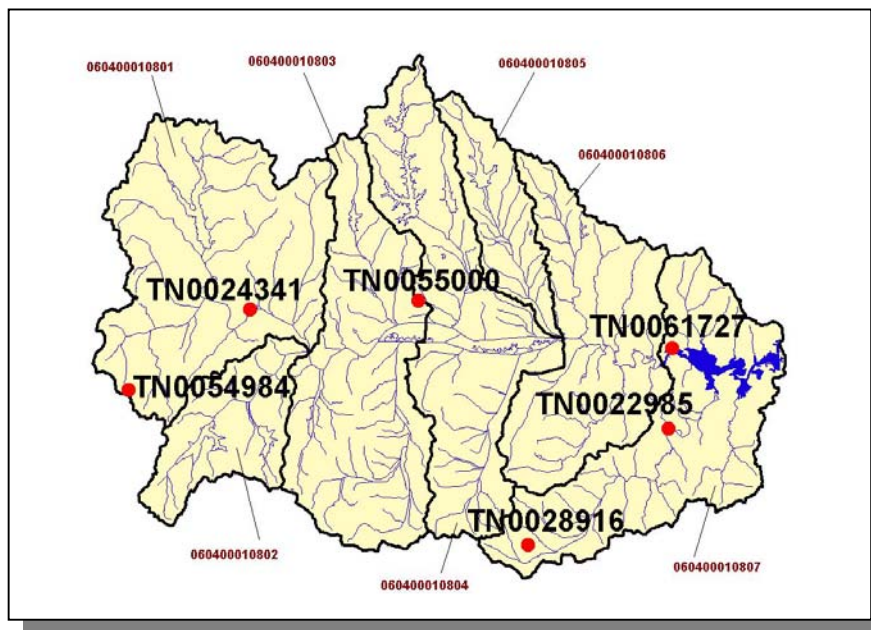


Figure 4-85. Location of NPDES Facilities in Subwatershed 060400010808. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806, and 060400010807 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

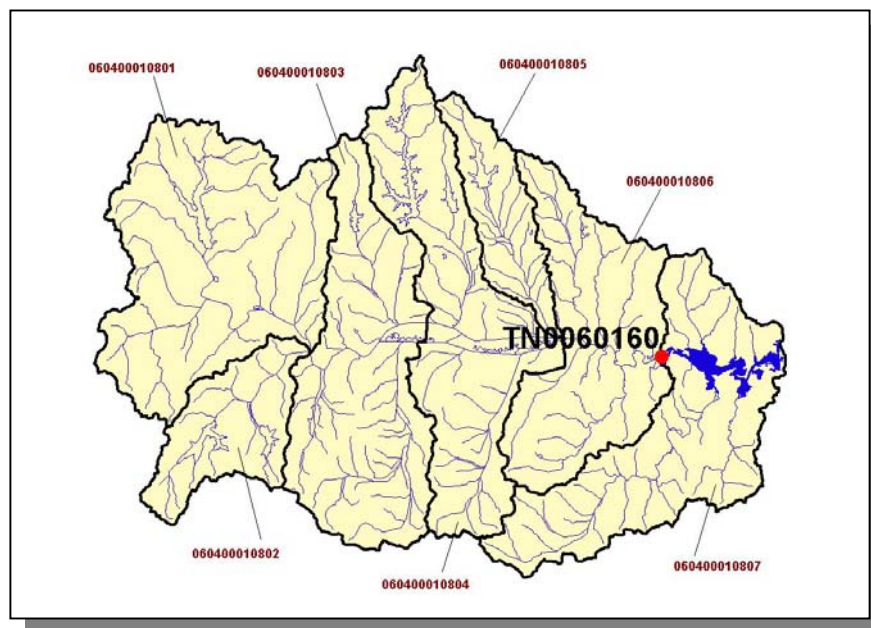


Figure 4-86. Location of Water Treatment Plants in Subwatershed 060400010808. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806, and 060400010807 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

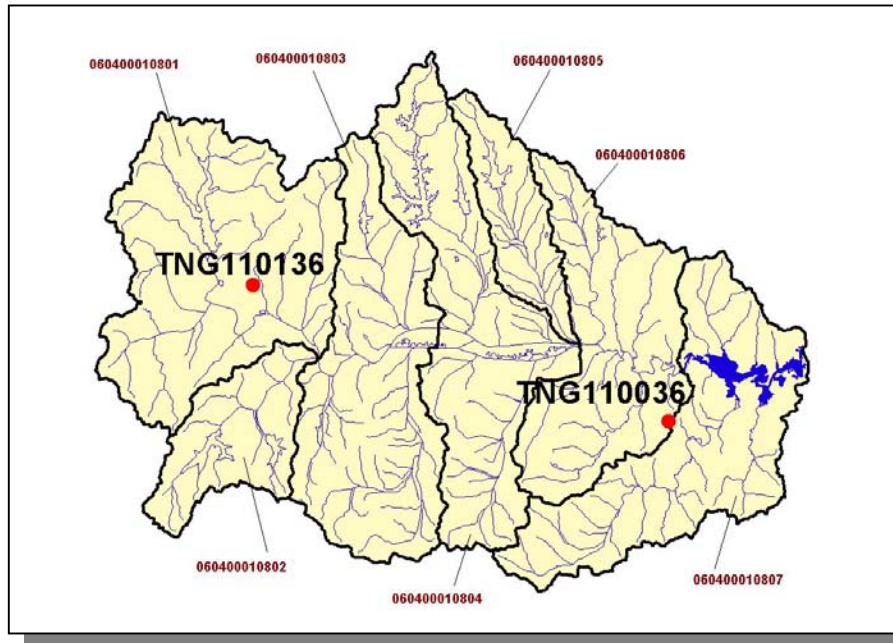


Figure 4-87. Location of Ready Mix Concrete Plants in Subwatershed 060400010808. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806, and 060400010807 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

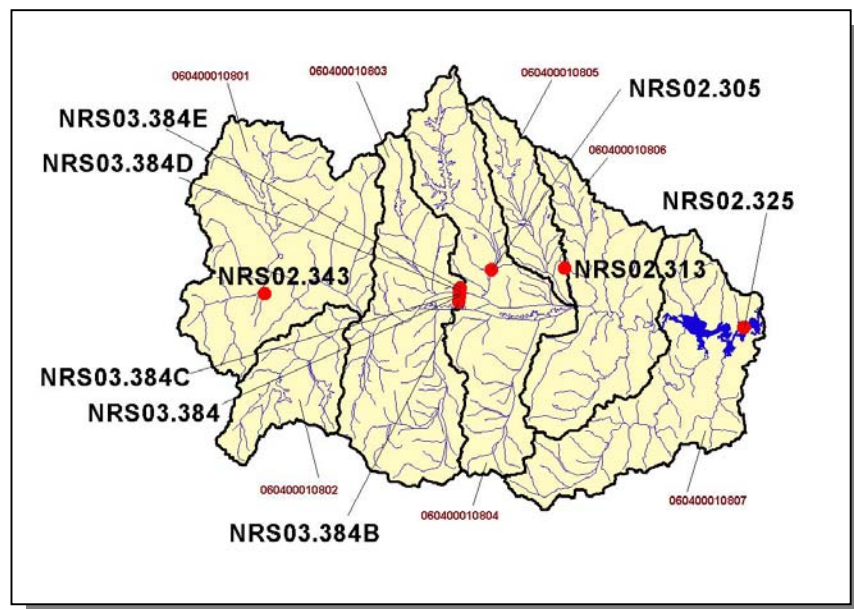


Figure 4-88. Location of ARAP Sites (Individual Permits) in Subwatershed 060400010808. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806, and 060400010807 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

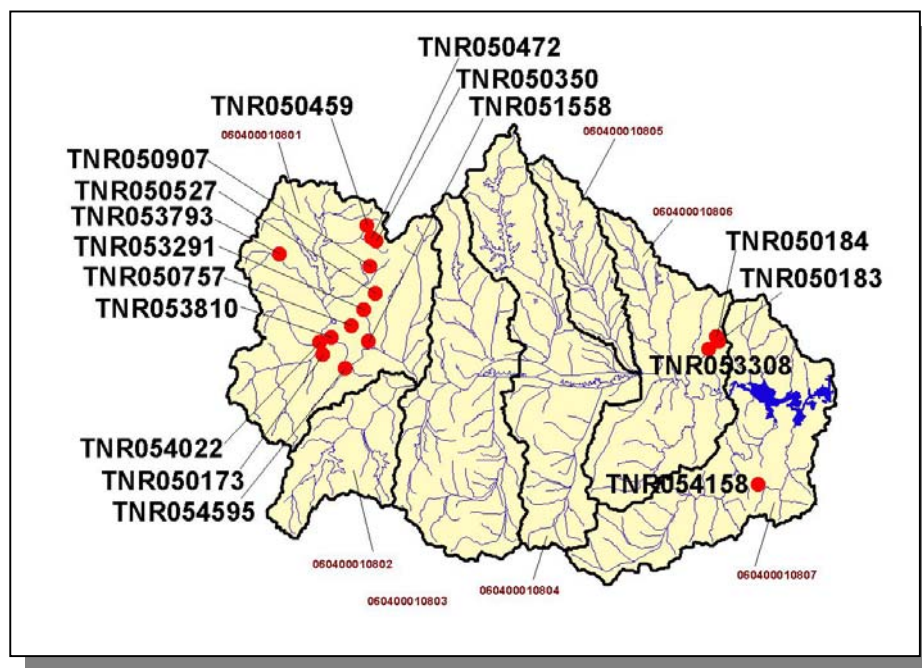


Figure 4-89. Location of TMSP Facilities in Subwatershed 0604000108. Subwatershed 060400010801, 060400010802, 060400010803, 060400010804, 060400010805, 060400010806, and 060400010807 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.H.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens Sold	Hogs	Sheep
8,349	17,878	33	17	<5	5,999	121

Table 4-51. Summary of Livestock Count Estimates in Subwatershed 0604000108. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Henderson	158.5	158.5	3.6	12.8

Table 4-52. Forest Acreage and Average Removal Rates (1987-1994) in Subwatershed 0604000108.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	0.85
Grass (Hayland)	0.06
Legumes (Hayland)	0.45
Grass, Forbs, Legumes (Mixed Pasture)	1.29
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	5.73
Cotton (Row Crops)	5.27
Sorghum (Row Crops)	1.71
Soybeans (Row Crops)	6.29
Wheat (Close-Grown Cropland)	2.98
Other Cropland not Planted	6.13
Conservation Reserve Program Lands	0.34
Non-Agricultural Land Use	0.00
Other Land in Farms	0.43
Farmsteads and Ranch Headquarters	0.40

Table 4-53. Annual Estimated Total Soil Loss in Subwatershed 0604000108.

4.2.1. 0604000109 (Tennessee River).

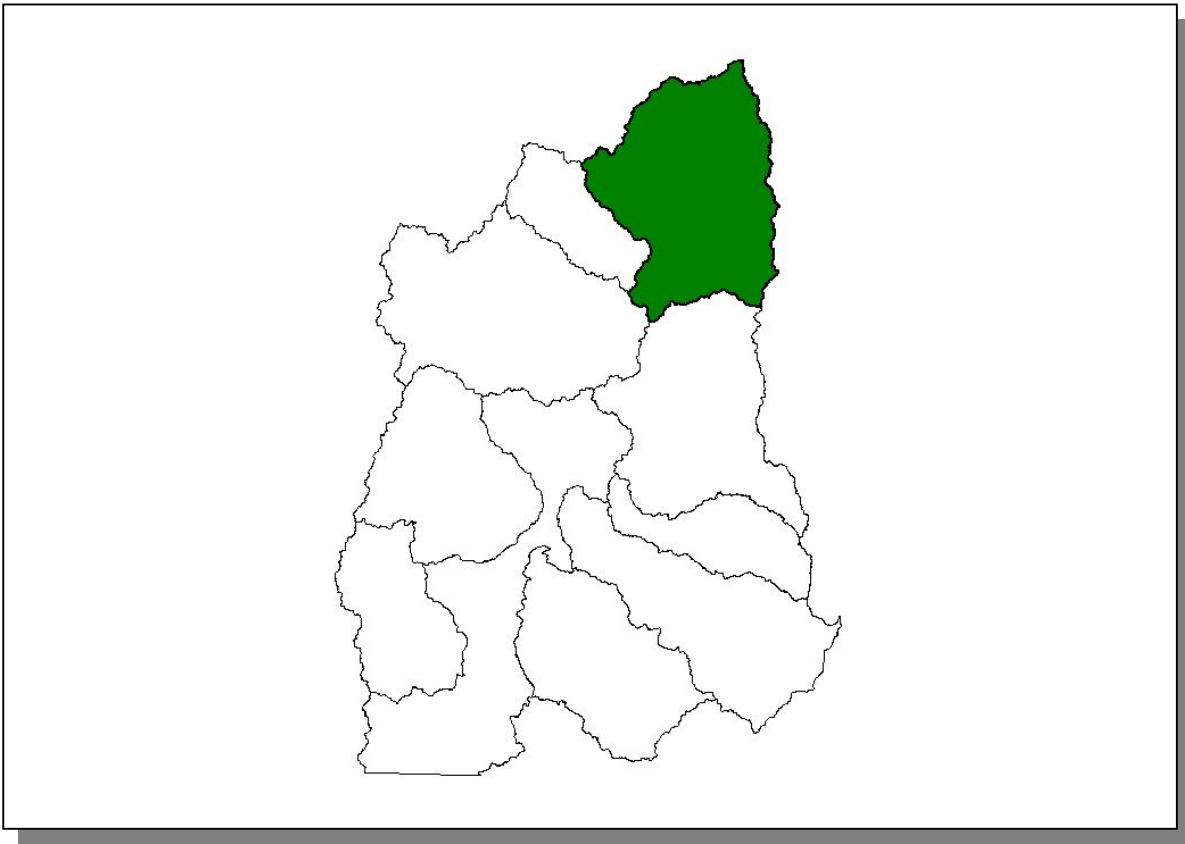


Figure 4-90. Location of Subwatershed 0604000109. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.I.i. General Description.

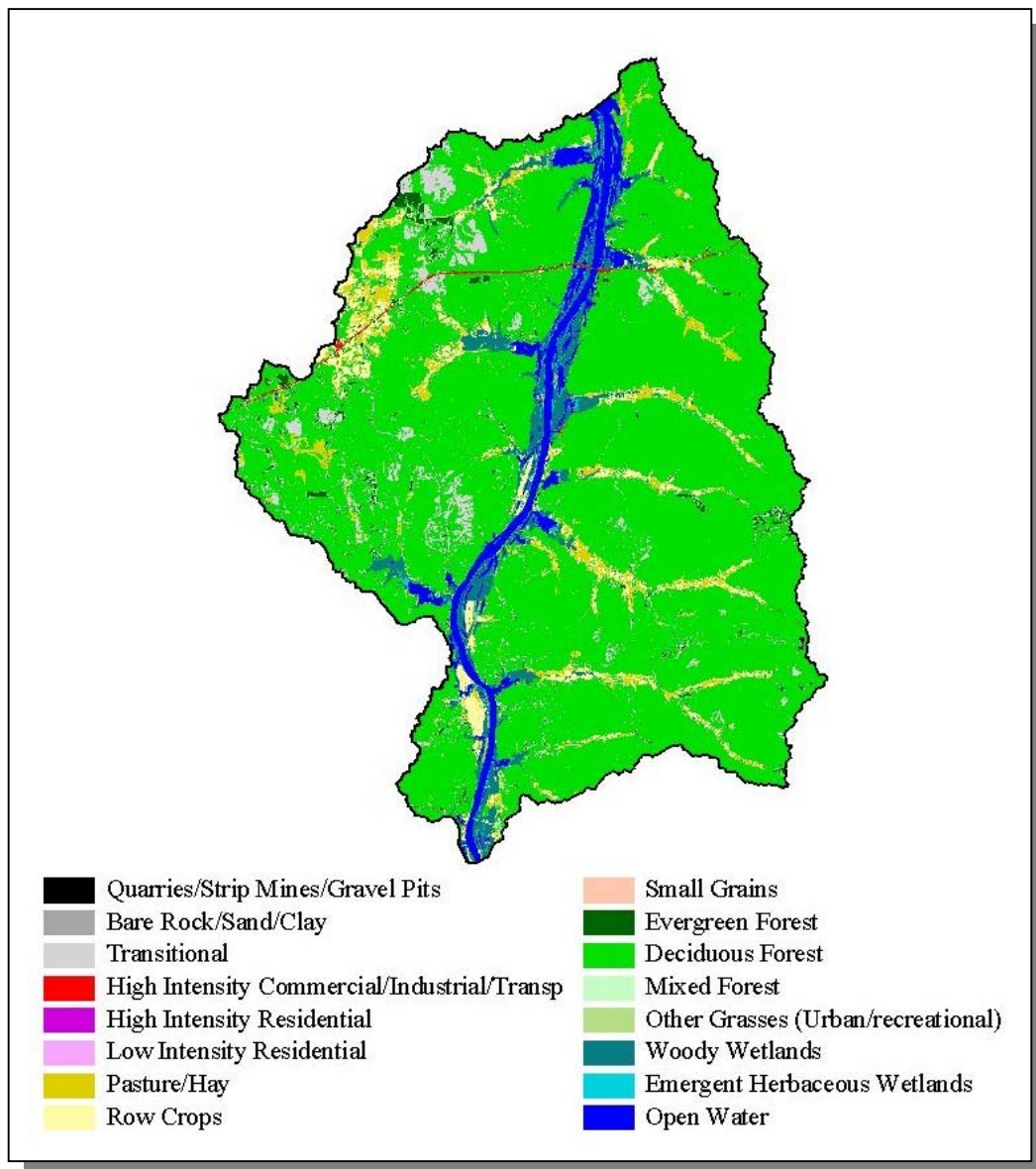


Figure 4-91. Illustration of Land Use Distribution in Subwatershed 0604000109.

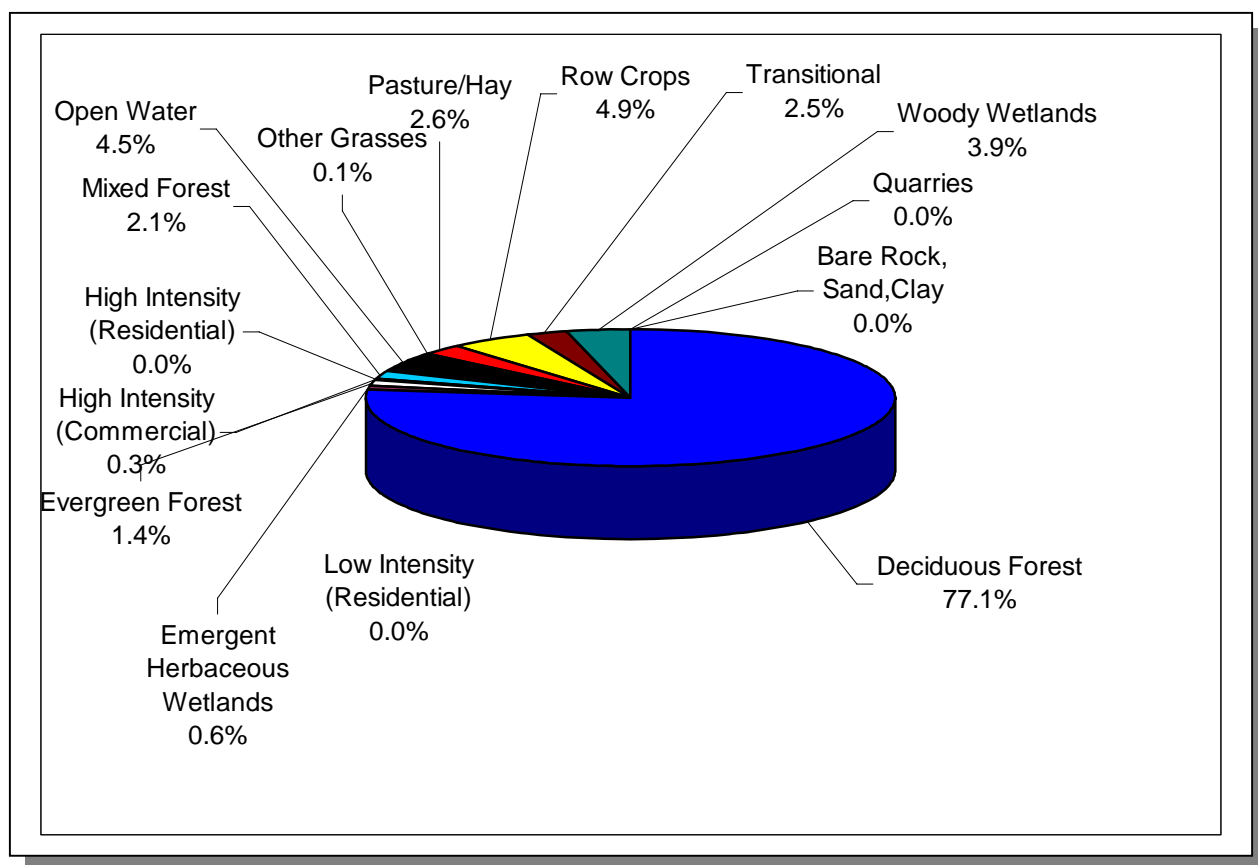


Figure 4-92. Land Use Distribution in Subwatershed 0604000109. More information is provided in Appendix IV.

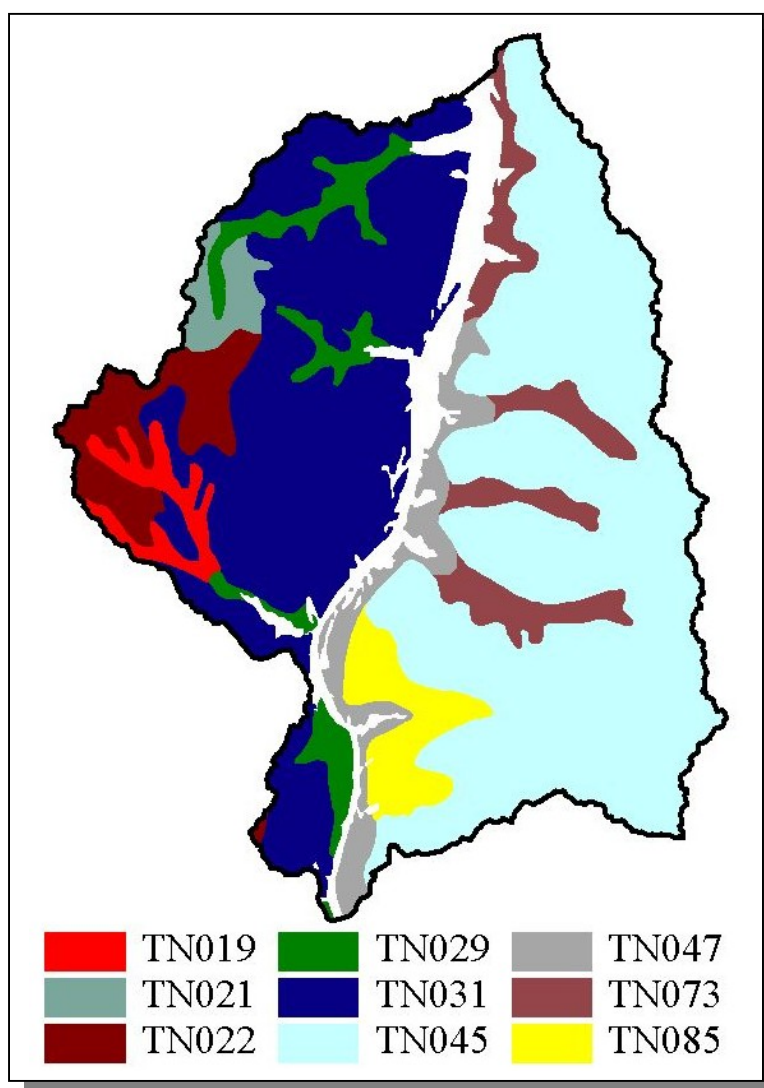


Figure 4-93. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000109.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN019	62.00	C	1.54	4.76	Loam	0.26
TN021	5.00	C	1.30	5.00	Silty Loam	0.43
TN022	5.00	C	1.98	5.07	Loam	0.37
TN029	8.00	C	2.96	5.40	Loam	0.33
TN031	0.00	C	3.27	4.88	Loam	0.33
TN045	0.00	B	1.95	5.45	Loam	0.35
TN047	21.00	C	1.62	5.73	Silty Loam	0.37
TN073	0.00	B	2.97	5.21	Loam	0.34
TN085	0.00	C	1.60	4.89	Clayey Loam	0.30

Table 4-54. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000109. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Benton	14,524	16,243	16,537	11.00	1,597	1,786	1,819	13.9
Decatur	10,472	10,799	11,731	21.40	2,248	2,319	2,519	12.1
Humphreys	15,795	16,839	17,929	5.76	910	970	1,032	13.4
Perry	6,612	7,438	7,631	29.69	1,963	2,208	2,265	15.4
Totals	47,403	51,319	53,828		6,718	7,283	7,635	13.6

Table 4-55. Population Estimates in Subwatershed 0604000109.

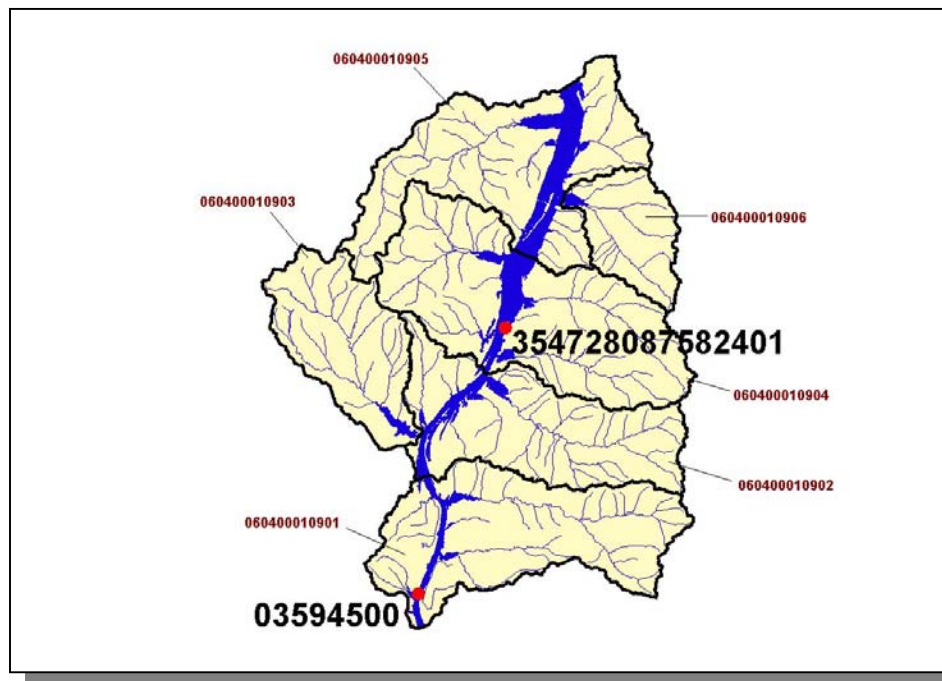


Figure 4-94. Location of Historical Streamflow Data Collection Sites in Subwatershed 0604000109. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905 and 060400010906 boundaries are shown for reference. More information is provided in Appendix IV.

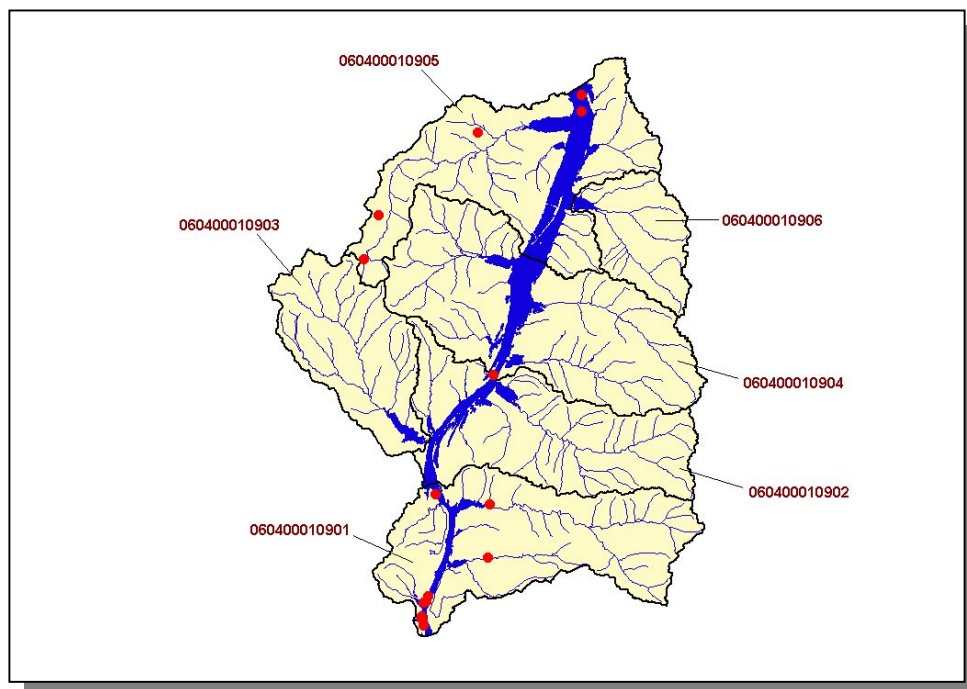


Figure 4-95. Location of STORET Monitoring Sites in Subwatershed 0604000109. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905 and 060400010906 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.I.ii. Point Source Contributions.

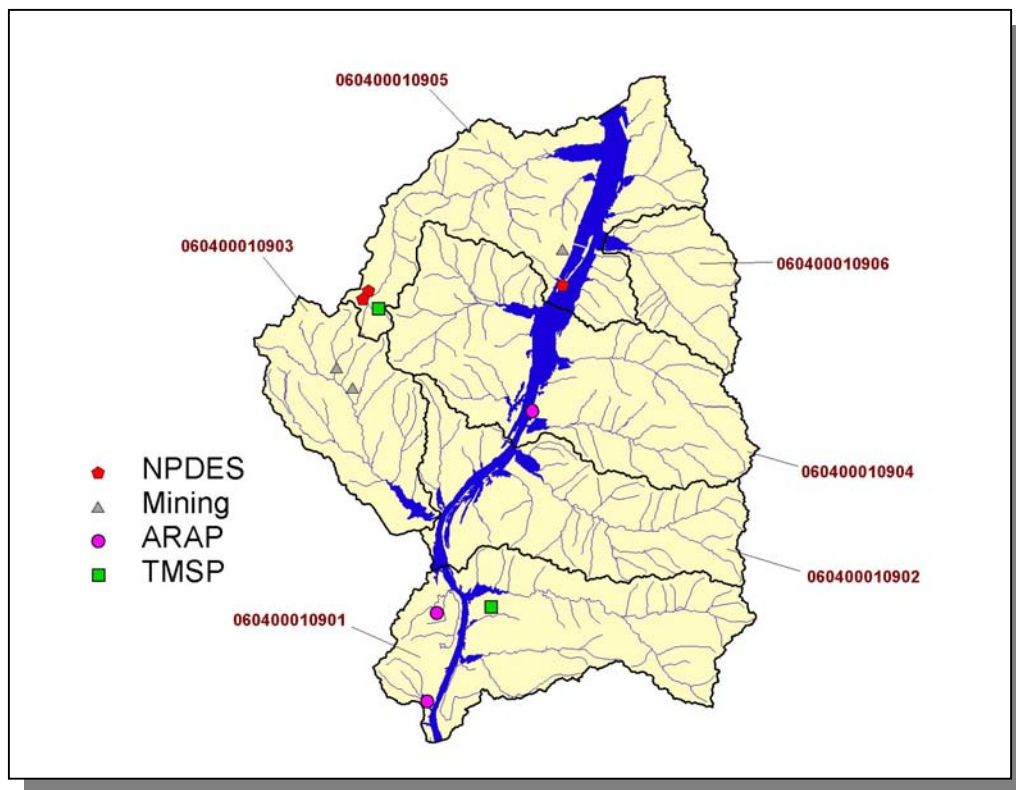


Figure 4-96. Location of Active Point Source Facilities in Subwatershed 0604000109. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905, and 060400010906 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

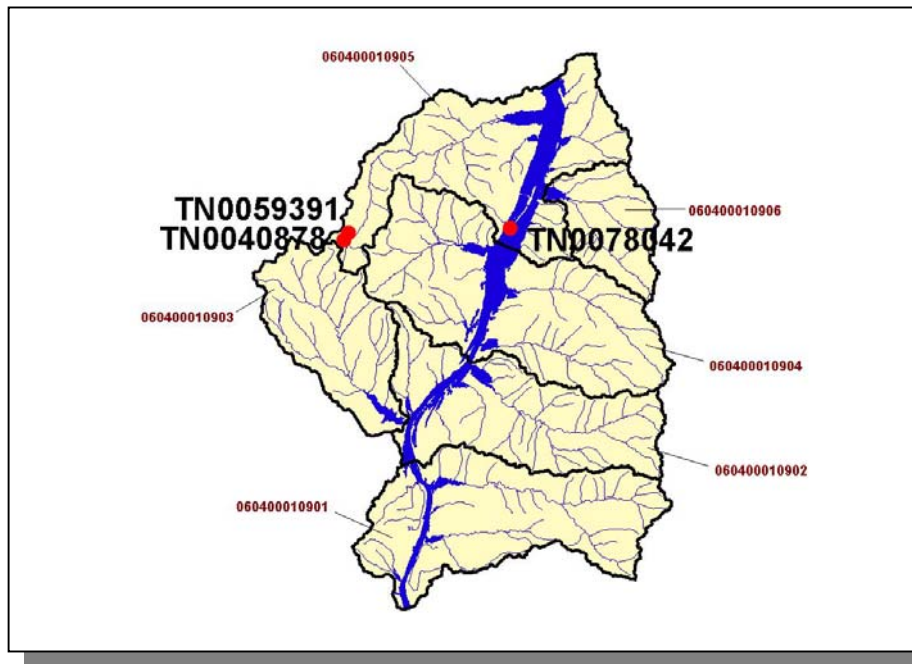


Figure 4-97. Location of NPDES Facilities in Subwatershed 0604000109. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905, and 060400010906 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

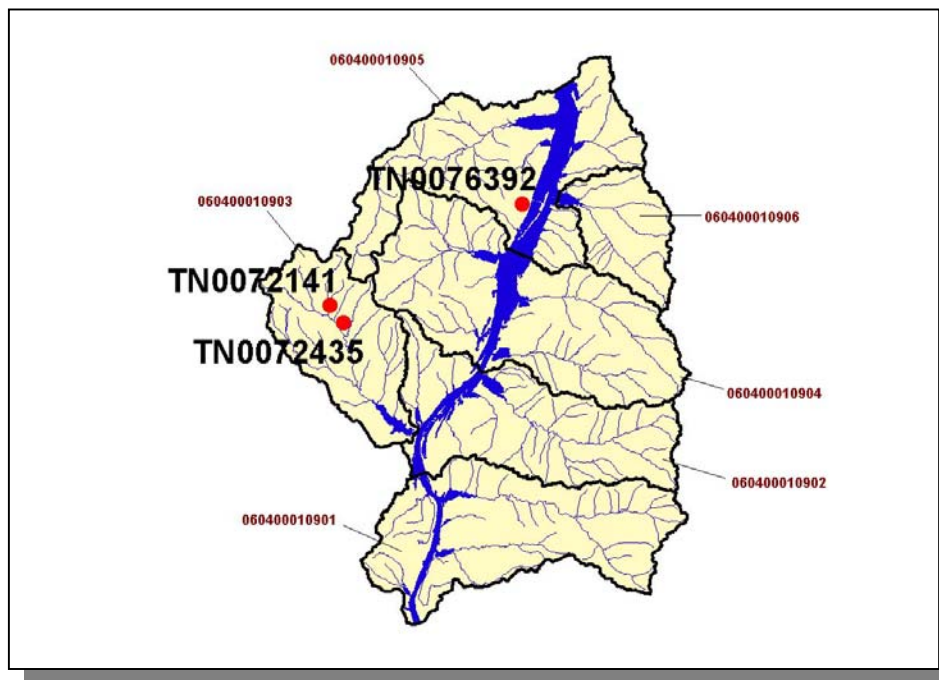


Figure 4-98. Location of Active Mining Facilities in Subwatershed 0604000109. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905, and 060400010906 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

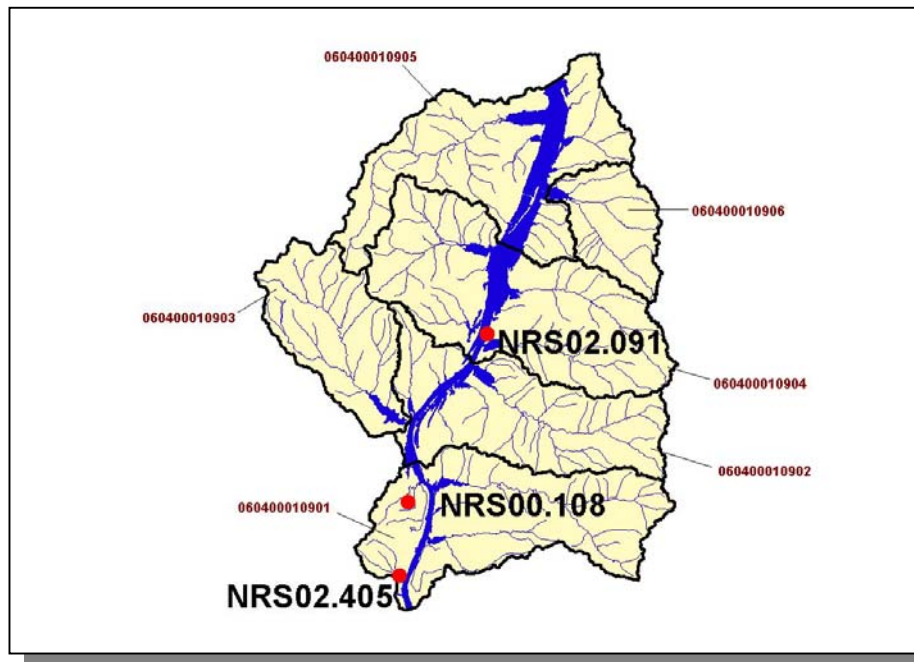


Figure 4-99. Location of ARAP Sites (Individual Permits) in Subwatershed 060400010909. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905, and 060400010906 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

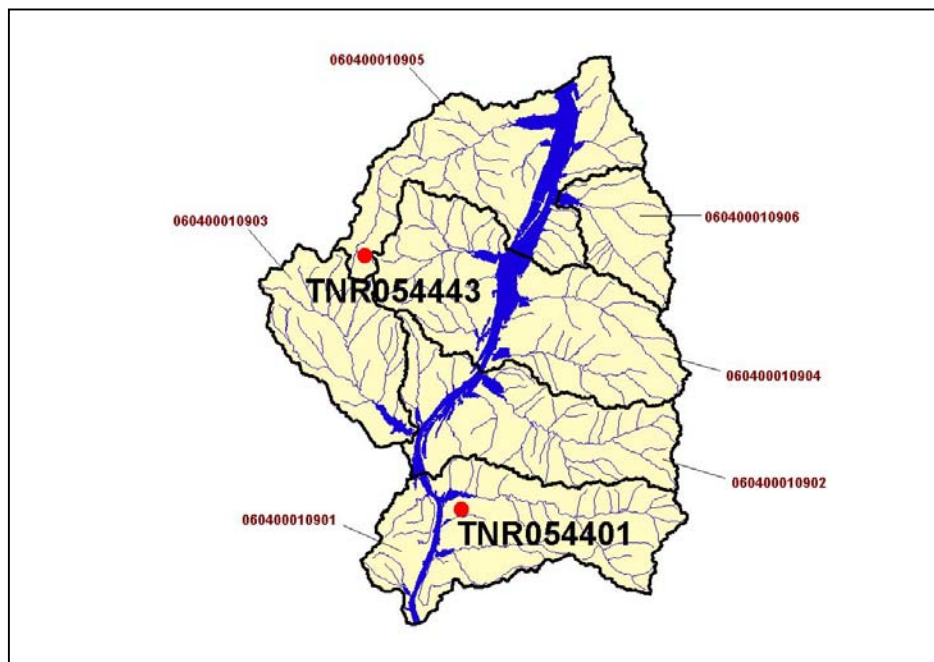


Figure 4-100. Location of TMSF Facilities in Subwatershed 060400010909. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905, and 060400010906 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.I.ii.a. Dischargers to Water Bodies Listed on the 2002 303(d) List

There are two NPDES facilities discharging to water bodies listed on the 2002 303(d) list in Subwatershed 0604000109:

- TN0059391 (North Forty Truck Stop) discharges to Eagle Creek @ RM 12.1
- TN0040878 (Pecan Shoppe of Camden) discharges to Eagle Creek @ RM 13.3

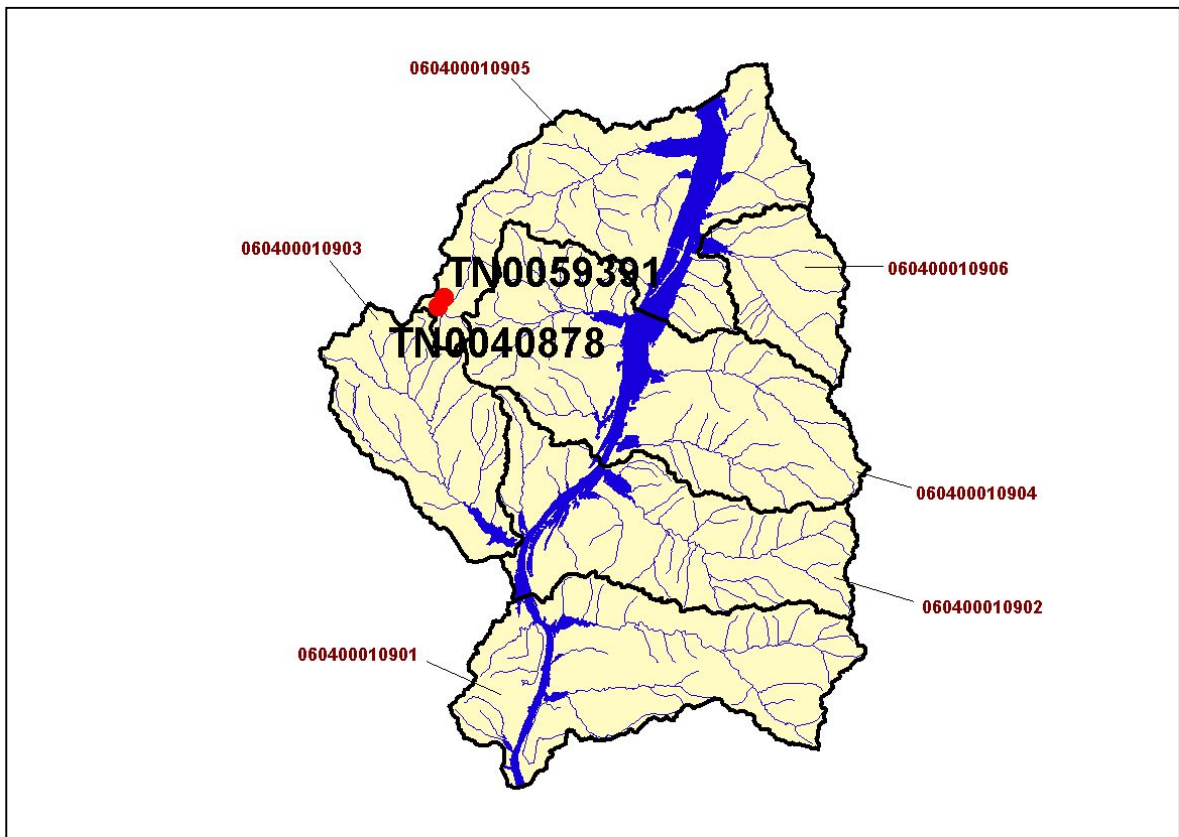


Figure 4-101. Location of NPDES Dischargers to Water Bodies Listed on the 2002 303(d) List in Subwatershed 0604000109. Subwatershed 060400010901, 060400010902, 060400010903, 060400010904, 060400010905, and 060400010906 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0059391		0		0	0.007
TN0040878			0	0	0.003

Table 4-56. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0604000109. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	CBOD ₅	FECAL COLIFORM	E. COLI	NH ₃	TRC	TSS	SETTLEABLE SOLIDS	DO	pH
TN0059391	X	X	X	X	X	X	X	X	X
TN0040878	X	X	X	X	X	X	X	X	X

Table 4-57. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0604000109. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

4.2.I.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens Sold	Hogs	Sheep
1,624	3,222	17	6	<5	510	5

Table 4-58. Summary of Livestock Count Estimates in Subwatershed 0604000109. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Benton	172.7	172.7	2.1	6.9
Humphreys	241.2	241.2	3.7	14.4
Perry	223.6	223.6	5.1	22.0
Totals	637.5	637.5	10.9	43.3

Table 4-59. Forest Acreage and Average Removal Rates (1987-1994) in Subwatershed 0604000109.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	0.79
Grass (Hayland)	0.15
Legumes (Hayland)	0.81
Legumes, Grass (Hayland)	0.14
Grass, Forbs, Legumes (Mixed Pasture)	0.43
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	5.50
Sorghum (Row Crops)	3.59
Soybeans (Row Crops)	8.97
Wheat (Close-Grown Cropland)	2.98
Other Cropland not Planted	3.18
Conservation Reserve Program Lands	0.19
Non-Agricultural Land Use	0.00
Other Land in Farms	0.79
Farmsteads and Ranch Headquarters	0.26

Table 4-60. Annual Estimated Total Soil Loss in Subwatershed 0604000109.

4.2.J. 0604000110 (Cub Creek).

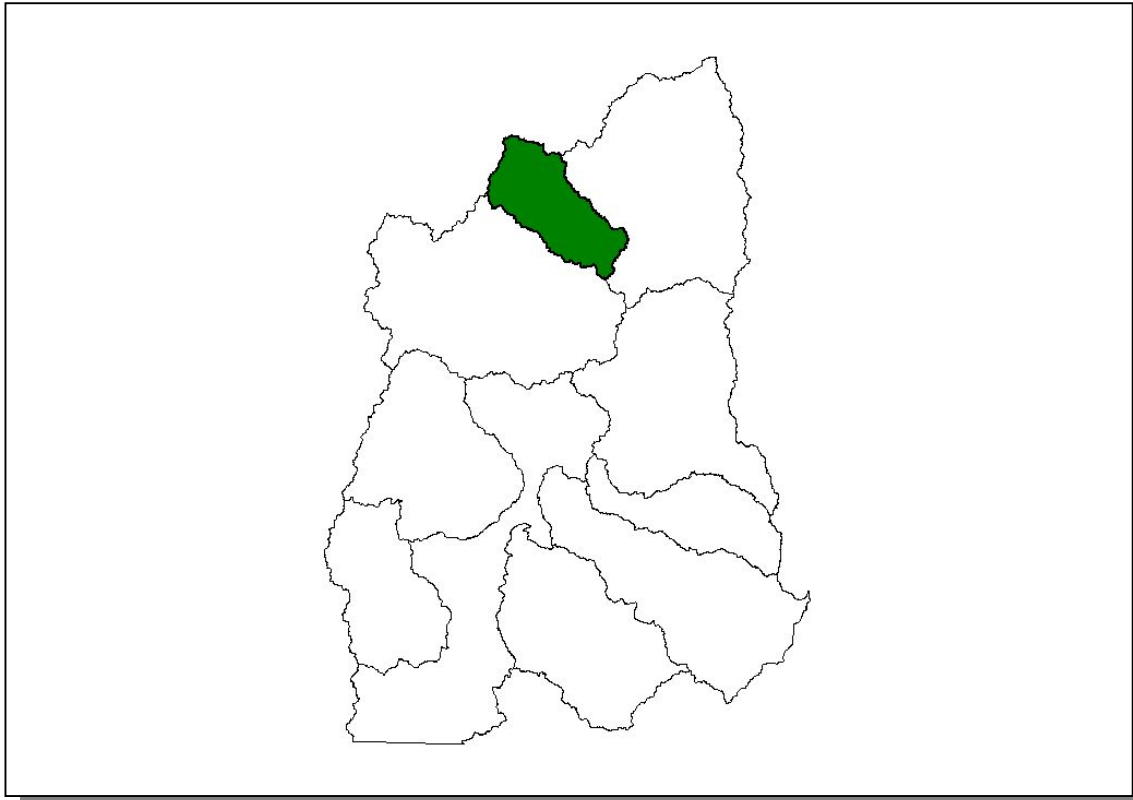


Figure 4-102. Location of Subwatershed 0604000110. All Tennessee Western Valley (Beech River) HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.J.i. General Description.

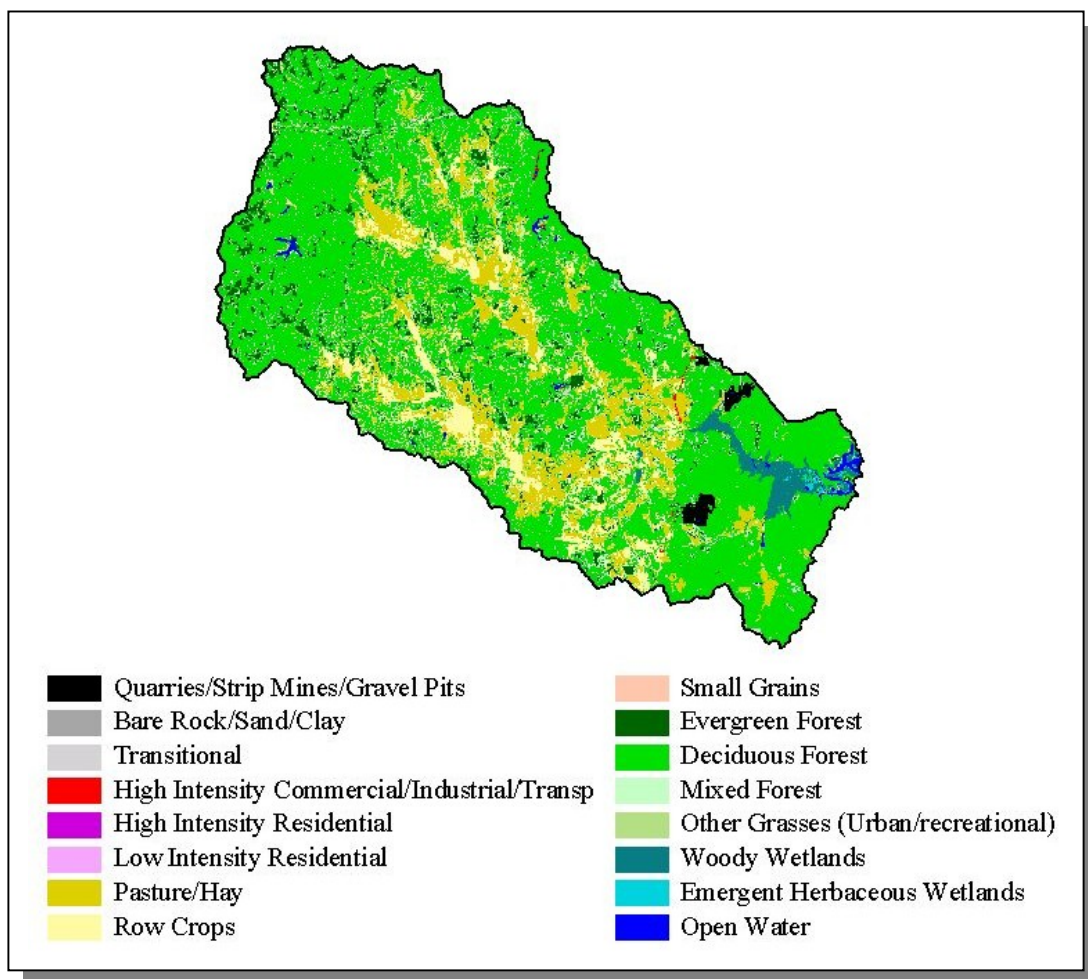


Figure 4-103. Illustration of Land Use Distribution in Subwatershed 0604000110.

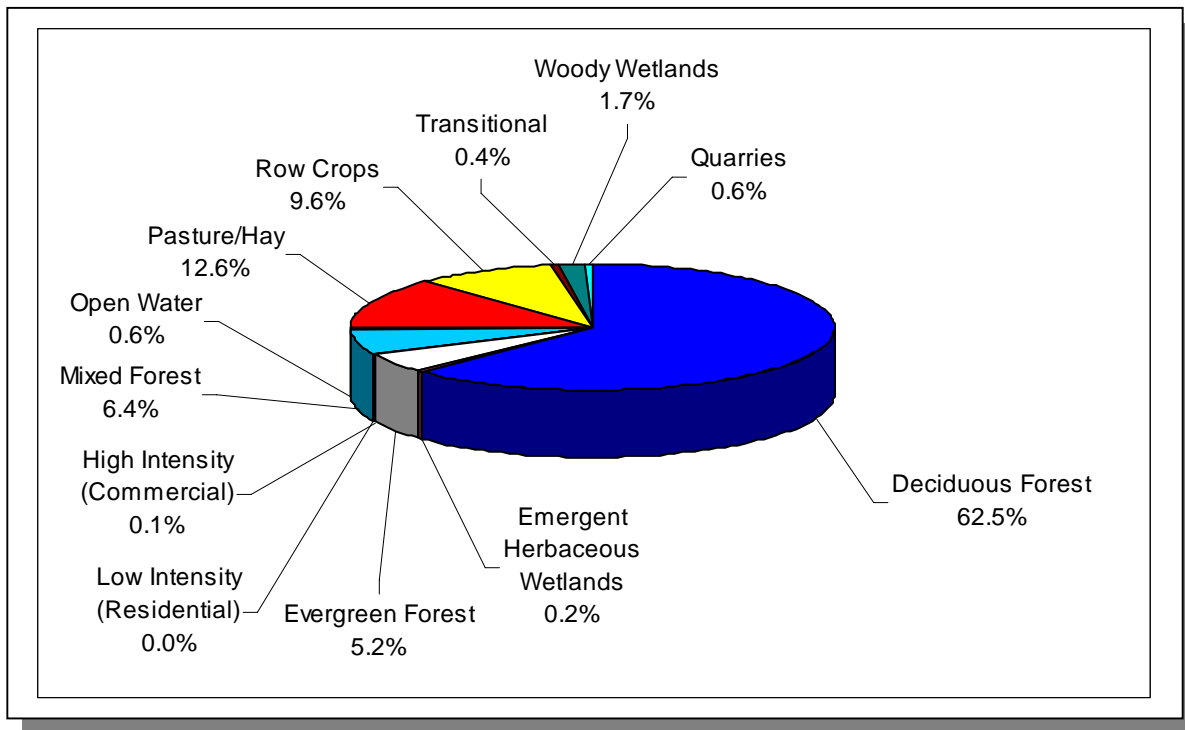


Figure 4-104. Land Use Distribution in Subwatershed 0604000110. More information is provided in Appendix IV.

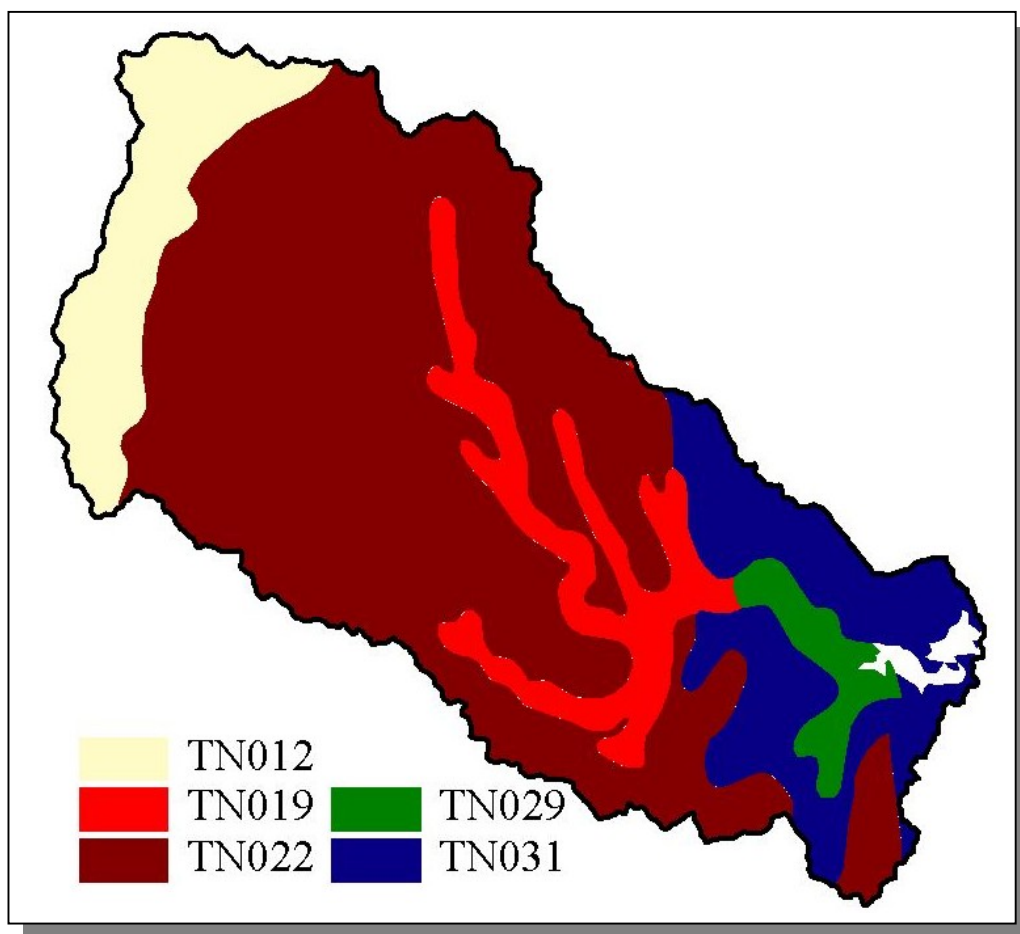


Figure 4-105. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000110.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN012	1.00	C	2.52	5.13	Silty Loam	0.39
TN019	62.00	C	1.54	4.76	Loam	0.26
TN022	5.00	C	1.98	5.07	Loam	0.37
TN029	8.00	C	2.96	5.40	Loam	0.33
TN031	0.00	C	3.27	4.88	Loam	0.33

Table 4-61. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0604000110. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Carroll	27,514	28,990	29,475	0.62	172	181	184	7.0
Decatur	10,472	10,799	11,731	13.78	1,443	1,488	1,617	12.1
Henderson	21,844	24,000	25,522	6.62	1,447	1,590	1,690	16.8
Totals	59,830	63,789	66,728		3,062	3,259	3,491	14.0

Table 4-62. Population Estimates in Subwatershed 0604000110.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Parsons	Decatur	2,033	928	698	226	4

Table 4-63. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0604000110

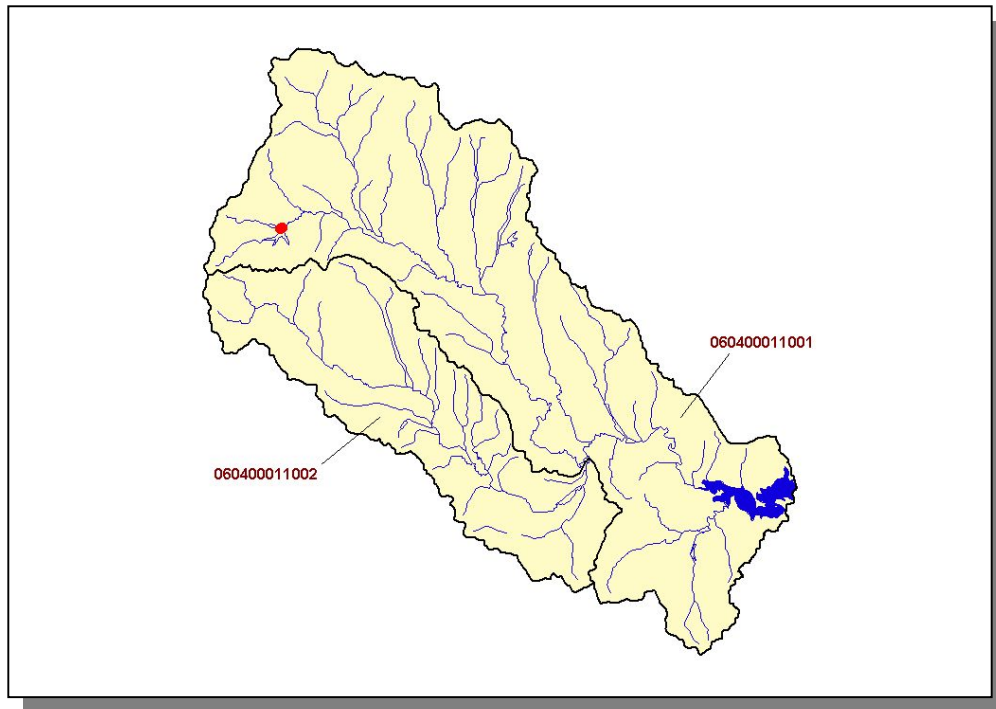


Figure 4-106. Location of STORET Monitoring Sites in Subwatershed 0604000110. Subwatershed 060400011001 and 060400011002 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.J.ii. Point Source Contributions.

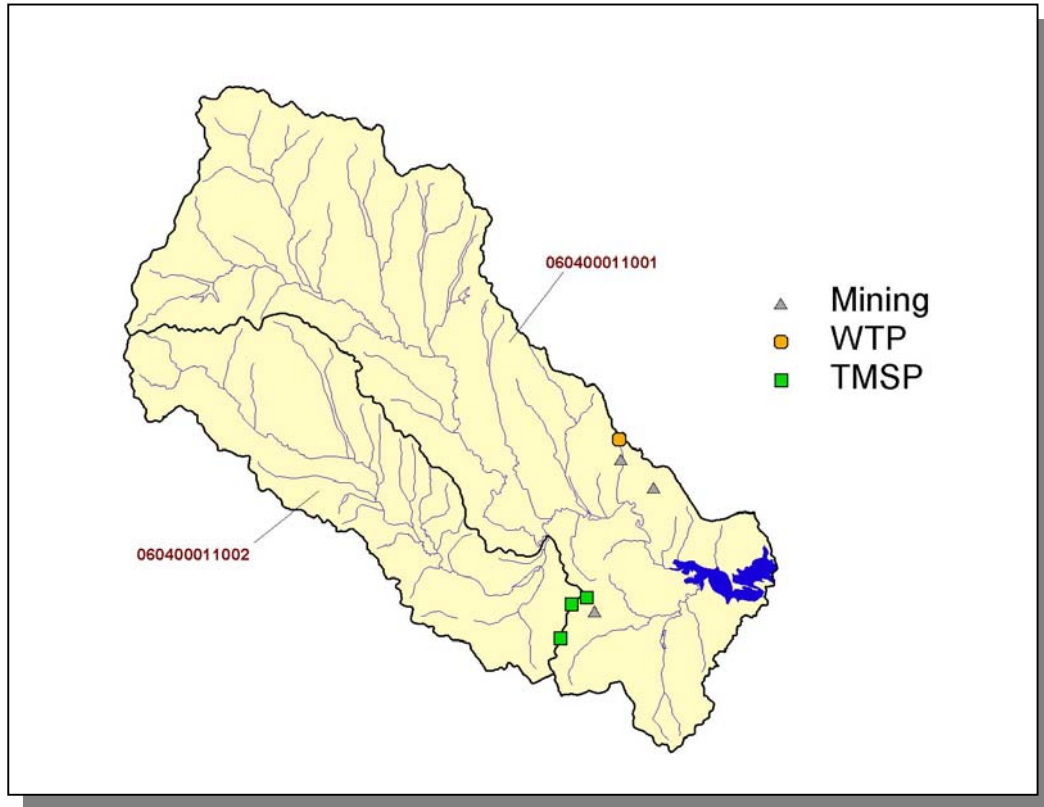


Figure 4-107. Location of Active Point Source Facilities in Subwatershed 0604000110. Subwatershed 060400011001 and 060400011002 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

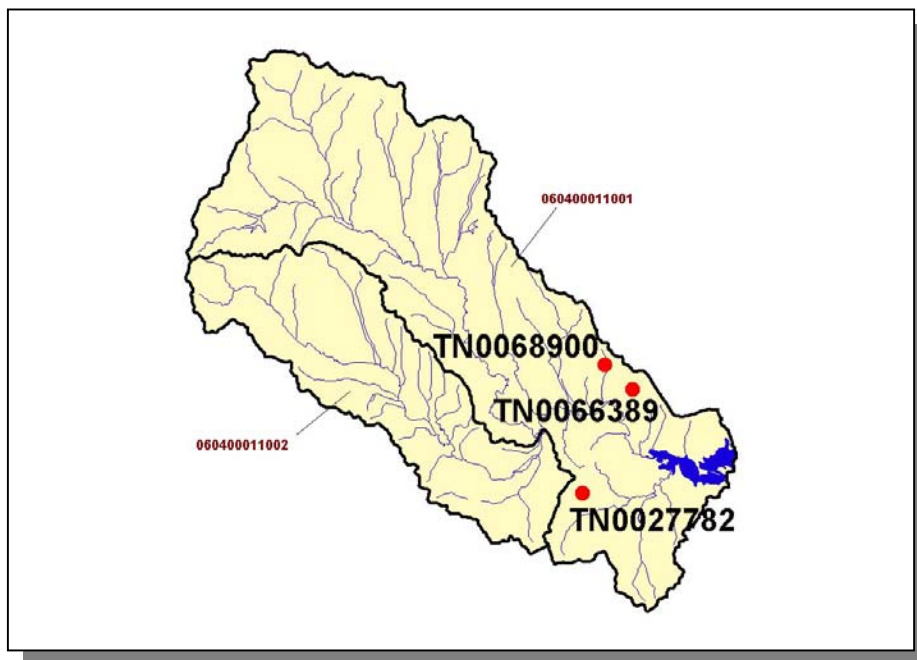


Figure 4-108. Location of Active Mining Facilities in Subwatershed 0604000110. Subwatershed 060400011001 and 060400011002 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.



Figure 4-109. Location of Water Treatment Plants in Subwatershed 0604000110. Subwatershed 060400011001 and 060400011002 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.



Figure 4-110. Location of TMSP Facilities in Subwatershed 0604000110. Subwatershed 060400011001 and 060400011002 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.J.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens Sold	Hogs	Sheep
1,642	3,230	<5	<5	<5	953	24

Table 4-64. Summary of Livestock Count Estimates in Subwatershed 0604000110.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carroll	169.1	169.1	0.6	2.0
Henderson	158.5	158.5	3.6	12.8
Totals	327.6	327.6	4.2	14.8

Table 4-65. Forest Acreage and Average Removal Rates (1987-1994) in Subwatershed 0604000110.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	0.81
Grass (Hayland)	0.08
Legumes (Hayland)	0.42
Legumes, Grass (Hayland)	0.46
Grass, Forbs, Legumes (Mixed Pasture)	1.06
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	4.62
Cotton (Row Crops)	5.49
Sorghum (Row Crops)	1.71
Soybeans (Row Crops)	6.49
Wheat (Close-Grown Cropland)	4.10
Other Cropland not Planted	5.75
Conservation Reserve Program Lands	0.37
Non-Agricultural Land Use	0.00
Other Land in Farms	0.44
Farmsteads and Ranch Headquarters	0.38

Table 4-66. Annual Estimated Total Soil Loss in Subwatershed 0604000110.